

SYSTEM SCHEMATICS

A500

**REVISIONS 5, 6A, 7
INCLUDES A501 REV 6C**

AUGUST, 1989

PN-314981-02

 **Commodore**

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INTERNATIONAL EDITION

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COMPONENT PARTS LIST **PCB ASSEMBLY #321510, A500, REV. 5**

321510-05 PCB ASSY, A500 NTSC

321510-06 PCB ASSY, A500 PAL

Commodore part numbers are provided for reference only and do not indicate the availability of parts from Commodore. Industry standard parts (Resistors, Capacitors, Connectors) should be secured locally. Approved cross-references for TTL chips, Transistors, etc. are available in manual form through the Service Department, order #314000-01.

IC COMPONENTS		
390084-03	M68000, 8 MHz	U1
318070-01	FAT AGNUS, 8370R3 NTSC	U2
318071-01	FAT AGNUS, 8371R1, PAL	U2
252127-02	PAULA, 8364R7	U3
252126-02	DENISE, 8362R8	U4
318072-01	GARY 5719	U5
318029-01	8520R4	U5
315093-01	ROM, KICKSTART V1.3	U5
390226-01	256K X 1 BIT DYNAMIC RAM	U16-U31
380223-01	256K X 1 BIT DYNAMIC RAM	U16-U31
901882-01	1488	U38
901883-01	1489	U39
390086-01	LF347/TL084	U14
390110-01	74F04	U33
901521-31	74LS32	U37
901521-38	74LS38	U36
390081-01	74F74	U32
901521-11	74LS157	U15
318050-01	74F244	U34,U35
901521-13	74LS244	U10,U12
310003-01	74HC245	U40,U41
901521-29	74LK373	U11,U13
901523-01	NE555	U42
252126-01	DENISE, 8362R6	U4
380223-05	DRAM, 256K X 1 BIT, 80ns	U16-U31
CONNECTORS		
252167-01	DIN, 5 PIN, SQUARE, FEMALE	CNB
390242-01	D-SUB, 9 PIN, MALE, RA, SOLDER-IN	CN1,CN2
390242-03	D-SUB, 23 PIN, MALE, RA, SOLDER-IN	CN9
390241-03	D-SUB/23PIN/FEMALE/RA/SOLDER-IN	CN5
390242-05	D-SUB/25PIN/MALE/RA/SOLDER-IN	CN6
390241-05	D-SUB/25PIN/FEMALE/RA/SOLDER-IN	CN7
252122-04	RCA JACK, BLACK	CN3
252122-01	RCA JACK, WHITE	CN4
252122-03	RCA JACK, YELLOW	CN10
390248-01	RCA JACK, METAL	CN3,CN4,CN10
325516-04	HEADER, 4PIN, POLARIZED, SIL	CN12
903326-08	HEADER, 8PIN, SIL	CN13
903345-17	HEADER, 34PIN, DIL	CN11
390224-01	HEADER/DUAL/RA/LONG/56POS/MALE	CNX
RESISTORS		
902410-18	NETWORK, 10K X 9 10PIN	RP501
390227-03	NETWORK, 22 OHM X 5, 10PIN	RP103
902422-05	NETWORK, 47 OHM X 4, 8PIN	RP102,RP403
902422-06	NETWORK, 68 OHM X 4, 8PIN	RP210,RP202
390227-05	NETWORK, 68 OHM X 5, 10PIN	RP203
902441-10	NETWORK, 120 OHM X 5, 6PIN	RP405
902442-17	NETWORK, 470 OHM X 7, 8PIN	RP104
902410-08	NETWORK, 4.7K X 9, 10PIN	RP101,RP102,RP401,RP501
902422-06	NETWORK, 68 OHM X 4, 8PIN	RP404
	ZERO OHM RESISTOR	W1,W2
	1 OHM, 5% 1/4W	EMI1301,EMI1406
	5.1 OHM, 5% 1/4W	EMI1401,R405,R406
	10 OHM, 5% 1/4W	R301,R302
	27 OHM, 5% 1/4W	R101,R102
	47 OHM, 5% 1/2W	EMI1501,EMI1503
	360 OHM, 5% 1/4W	R331,4321
	390 OHM, 5% 1/4W	R325,R335
	470 OHM, 5% 1/4W	R305
901550-01	1K OHM, 5% 1/4W	R303,R304,R324,R334,R713,R305
901550-17	1.2K OHM, 5% 1/4W	R704
901550-23	2.7K OHM, 5% 1/4W	R701
901550-39	3.9K OHM, 5% 1/4W	R702
901550-19	4.7K OHM, 5% 1/4W	R402,R403,R502-R504
901550-20	10K OHM, 5% 1/4W	R322,R323,R333,R339,R501,R505,R506
901550-15	27K OHM, 5% 1/4W	R703

RESISTORS (Continued)		
901550-22	47K OHM, 5% 1/4W	R712
901550-84	1M OHM, 5% 1/4W	R711
901550-75	120 OHM, 5% 1/4W	R103-R108
901550-20	10K OHM, 5% 1/4W	R306,R308
901550-23	2.7K OHM, 5% 1/4W	R307
901550-82	470K OHM, 5% 1/4W	R326,R336
901550-89	150 OHM, 5% 1/4W	R409
BEADS/FILTERS		
252133-01	FERRITE BEAD	RB801,RB802
903025-01	FERRITE BEAD	FB802,FB801,EMI1411-EMI1417,EMI1421-EMI1427
903025-01	FERRITE BEAD	FB802,FB101EMI1411-EMI1417,EMI1421-EMI1427,EMI1402-EMI1431-EMI1435
		EMI1301-EMI1303,EMI1401-EMI1405,EMI1411-EMI1417,EMI1421-EMI1427,EMI1431-EMI1435,EMI1511-EMI1538,EMI1601-EMI1611-EMI1626,EMI1701-EMI1704
		EMI1101,EMI1302,EMI1303,EMI1305,EMI1306,EMI1402-EMI1404,EMI1407,EMI1431-EMI1435,EMI1511-EMI1524,EMI1531-EMI1538,EMI1601,EMI1611-EMI1626,EMI1702-EMI1704
		EMI1101,EMI1302,EMI1303,EMI1305,EMI1306,EMI1403-EMI1407,EMI1511-EMI1524,EMI1531-EMI1538,EMI1601,EMI1602,EMI1611-EMI1626,EMI1701,EMI1702
251842-02	EMI FILTER, 100 pf	
251842-02	EMI FILTER, 100 pf	
251842-02	EMI FILTER, 100 pf	

CAPACITORS		
900462-27	39 pF, MLC, AXIAL, NPO	C703
900462-37	100 pF, MLC, AXIAL, NOP	C704
900463-16	1000 pF MLC AXIAL X7R	C705
900463-16	1000 pF MLC AXIAL X7R	C411-C413,C421-C423
900463-23	3900 pF MLC AXIAL X7R	C323,C333
900463-26	6800 pF MLC AXIAL X7R	C322,C332
390082-02	.01 uF MLC AXIAL Z5U	C410,C412,C801,C713
390082-02	.01 uF MLC AXIAL Z5U	C308,C713
900463-36	.047 uF MLC AXIAL X7R	C311-C314
390082-01	.1 uF MLC AXIAL Z5U	C7,C8,C10,C11-C13,C15,C33-C37,C39,C321,C331,C711,C701(-01 & -02)
390082-05	.22 uF MLC AXIAL Z5U	C1-C6,C16-C32,C14,C40-C42,C301,C302,C305,C501,C502
		C325,C335
390082-05	.22 uF MLC AXIAL Z5U	C306,C712
390101-06	10 uF ELECT RADIAL	C303,C304,C307,C334
390101-04	22 uF ELECT RADIAL	C812-C815,C821,C822
390101-01	47 uF ELECT RADIAL	C307,C811
390101-02	100 uF ELECT RADIAL	C401,C402
900100-56	3300 uF 10 V ELECT RADIAL	
251029-06	VARIABLE CAP 4.5-45 pf	C702

COMPONENT PARTS LIST **PCB ASSEMBLY #321510, A500, REV. 5 (Continued)**

TRANSISTORS/DIODES			MISCELLANEOUS (Continued)		
390239-01	TRANS 2N5770 NPN OSC.	Q701	904150-06	SOCKET, 40 PIN DIP	U6-U8
902658-01	TRANS 2N3904 NPN GP	Q501,Q711	251313-01	SOCKET, 48 PIN DIP	U3-U5
902707-01	TRANS 2N3906 PNP GP	Q502,Q503,Q301	251313-02	SOCKET, 48 PIN DIP	U3-U5
390254-01	TRANS JFET PN4302 MPF-102	Q321,Q331	390185-01	SOCKET, 84 PIN PLCC	U2
900850-01	DIODE, 1N4148	D501	904150-10	SOCKET, 64 PIN DIP	U1
CRYSTALS			312519-01	WIRE ASSEMBLY JUMPER	
900556-11	28.63636 MHz	Y1	900462-37	CAP 100 pF MLC AXIAL NOP	C101,R106,R107,R108, R103,EM1402
900556-12	28.37516 MHz	Y1	390082-02	CAP 0.01 uF MLC AXIAL Z5U	C801-C803
325566-14	OSCILLATOR, 28.63636 MHz	X1	380223-03	IC, 256K X 1 BIT DYNAMIC RAM	U16-U31
252344-01	OSCILLATOR, 28.37515 MHz	X1	390226-03	IC, 256K X 1 BIT DYNAMIC RAM	U16-U31
MISCELLANEOUS			390226-05	IC, 256K X 1 BIT DYNAMIC RAM	U16-U31
390229-02	VIDEO HYBRID	HY1	901550-94	RES 68 OHM 5% 1/4W	
390229-01	VIDEO HYBRID	HY1	900463-36	CAP .047 uF MLC AXIAL X7R	
251878-02	LINE FILTER, 8PIN	LF1	320481-01	SHRINK TUBING .50 IN. LG.	
901151-19	CHOKE, 3.3 uH	L701	312511-01	SCHEMATIC	



Jumpers and Stuff

REF.	TYPE	DESCRIPTION	PAGE
JP1	BLUE	Keyboard Reset	7
JP2	BLUE	Memory Addr. CG vs 08	2
JP3	BLUE	Inst. Memory Res0 vs 1	5
			4
TP1	POST	RTC Frequency Test	9
CG12	TRIM	RTC Frequency Adjust	9
W1-2	0 Ohm	Ground Continuity FCC	8

Conn

REF.	TYPE
CN1	DB9P
CN2	DB9P
CN3	RCA-J
CN4	RCA-J
CN5	DB23S
CN6	DB25P
CN7	DB25S
CN8	50 DI
CN9	DB23P
CN10	RCA-J
CN11	DIL-3
CN12	SIL-4
CN13	SIL-8
P1	EDGE8
CNX	RA-56
CNY	RA56

Signal Glossary

SIGNAL	DESCRIPTION (AREA)	PAGES
28MHZ	28.63536 MHz Master Clock	2
7MHZ	7.15909 MHz Processor Clock	2,5
AL23:11	Processor Address Bus (68000)	2,3,7,9
ACK	Data Acknowledge (Parallel Port)	6
AS	Address Strobe (68000)	2,7
AUDIN	Audio Input (RS232 Port)	4,6
AUDOUT	Audio Output (RS232 Jack)	4,6
BLER	Bus Error (68000)	2,7
BG	Bus Grant (68000)	2,7
BGACK	Bus Grant Acknowledge (68000)	2,7
BLISS	Blitter Slowdown (Chips)	2
BLIT	Chip Memory Access (Chips)	2,7
BR	Bus Request (68000)	2,7
BUSY	Device Busy (Parallel Port)	6
CAS1/0	Column Address Strobe (DRAM)	2,3,9
CLK/CLKU	Color Clock / Quadrature (Chips)	2,4,7
CLKC	7.15909 MHz Quadrature Clock (Chips)	2,5,7
CHNG	Media Change (Floppy)	6,7
CLKRD/WR	Read-Line Clock Read / Write (RTC)	2,9
COMP	Monochrome Composite Video (Video)	5
CSYNC	Composite Sync (Video)	2,5
CIS	Clear to Send (RS232 Port)	6
DL15:0	Processor Data Bus (68000)	2,3,6,7,9
DIR	Step Direction (Floppy)	6,7
DKRD	Disk Read Data (Floppy)	4,7
DKWD	Disk Write Data (Floppy)	4,7
DKWE	Disk Write Enable (Floppy)	4,7
EMAL	Chip DMA Request Line (Chips)	2,4
DRA18:0	DRAM Address Bus (DRAM)	2,3,9
DRC15:0	DRAM Data Bus (DRAM)	2,3,4,5,9
DSR	Data Set Ready (RS232 Port)	6
DIACK	Data Transfer Acknowledge (68000)	2,3,7
DLR	Data Terminal Ready (RS232 Port)	6
E	Peripheral Enable Clock (68000)	2,6,7
EXRAM	Expansion Memory Present	2,3,9
FC12:0	Function Code (68000)	2,7
FIRE0/1	Fire Button 0/1 (Keyswitch)	2,5,6
HLT	Processor Halt (68000)	2,7
HSYNC	Horizontal Sync (Video)	2,5,6
INDEX	Index Pulse (Floppy)	6,7
INT12,3,6	Interrupt Request (Chips)	2,4,6,7
IORSET	I/O Reset	6,7
IPL12:0	Interrupt Priority Level (68000)	2,4,7
KBCLOCK	Keyboard Clock (Keyboard)	6
KBDATA	Keyboard Data (Keyboard)	6
KBRESET	Keyboard Reset (Keyboard)	6
LDS/UDS	Upper / Lower Data Strobe (68000)	2,7
LED	Power On LED / Audio Filter Disable	4,6

SIGNAL	DESCRIPTION
LEFT/RIGHT	Left / Right
MTR	Motor
MTRQ	Motor
MOV/MOH	Mouse
MIV/MIH	Mouse
OVL	Overflow
OVR	Overflow
PIXELSW	Genlock
POT0X/0Y	Pot. Li
POT1X/1Y	Pot. Li
PQUIT	Paper
PPDI7:0	Parallel
RAMEN	RAM En
REGEN	Chip E
RAS0/1	Row Ad
RDY	Drive
RESET	Genera
RGA18:1	Regist
RZG/B	Red. /
RI	Ring I
ROMEN	ROM En
RTS	Request
RSL	Process
RXD	Receiv
RW	Process
SEL	Select
SF13:0	Drive
SIDE	Side S
STEP	Step I
TRKD	Track
TXD	Transm
VMA	Valid
VPA	Valid
VSYNC	Vertical
WL	Write
WPROT	Write
XCLK	Extern
XCLKEN	Extern
XRDY	Extern

Connectors

REF	DESCRIPTION	PAGE
2	Mouse/Joystick 1	2
2	Mouse/Joystick 2	2
J	Right Audio Output	4
J	Left Audio Output	4
3S	External Floppy	7
5P	RS232 Serial Port	6
5S	Parallel Printer Port	6
DIN	Power Supply Connector	8
3P	Video Output	5
J	Composite Video	5
34	Internal Floppy Signal	7
4	Internal Floppy Power	8
8	Keyboard Connector	6
86	Expansion Connector	7
6H	Mem. Exp. Main Board	3
5-F	Mem. Exp. Sub-Board	9

ECO Log

ECO NUMBER	DESCRIPTION	DATE
870152	Additional Parts for FCC	05/12/87
870222	The "Transistor Fix"	06/16/87
870302	Change R1 resistor for FTZ	10/09/87
870207	More FCC Changes	09/04/87
880238	Add E Clock Termination	03/03/89

DESCRIPTION (AREA)	PAGES
Right Audio (Audio)	4
On (Floppy)	4,6
On - Drive 0 (Floppy)	4,6,7
0 Quadrature V/H (Joysticks)	5
1 Quadrature V/H (Joysticks)	5
lay ROM over RAM	2,6
vide System Decoding	2,7
lock Pixel Switch (Video)	5
Lines 0 X/Y (Joysticks)	4,5
Lines 1 X/Y (Joysticks)	4,5
r Out (Parallel Port)	6
l Parallel Port Data (Parallel Port)	6
Enable (Chips)	2
Register Enable (Chips)	2
Address Strobe (DRAM)	2,3,9
e Ready (Floppy)	6,7
al Reset	6,7
ster Address Bus (Chips)	2,4,5
/ Green / Blue (Video)	5
Indicate (RS232 Port)	6
Enable (ROM)	2,3
est to Send (RS232 Port)	6
essor Reset (68000)	2,4,7
ive Data (RS232 Port)	4,6
essor Read/Write (68000)	2,6,7
ct (Parallel Port)	6
e Select (Floppy)	4,6,7
Select (Floppy)	6,7
In/Out Command (Floppy)	6,7
k Zero Sense (Floppy)	6,7
mit Data (RS232 Port)	4,6
d Memory Address (68000)	2,6,7
d Peripheral Address (68000)	2,7
ical Sync (Video)	2,5,6
e Enable (DRAM)	2,3,9
e Protect Sense (Floppy)	6,7
nal Genlock Clock (Video)	2,5
nal Clock Enable (Video)	2,5
nal Data Ready	2,5

Key Components

REF	CHIP	DESCRIPTION	PAGE
U1	68000	68000 Processor	2
U2	8370	For Agnus - NTSC	2
	8371	For Agnus - PAL	alt
	8372	Agnus HR	alt
U3	8364	Paula	4
U4	8362	Danise	5
	8373	Danise HR	alt
U5	5719	Geny	2,4
U6	asst	ROM 128Kx16, 200 nS	3
U7-8	8520	Amiga VIA, 1 MHz	6
U9	6242B	OK Bus RTC	9
U14	LT347	6 MOS Op-Amp	4
	LT384	6 MOS Op-Amp	alt
U38	1488	E/A Line Driver	4
U39	1489	E/A Line Receiver	4
U42	NE555	Timer	7
U16-31	asst	DRAM 256Kx1, 150 nS	3
U48-63	asst	DRAM 256Kx1, 150 nS	9
X1	OSC	17.28.63636 MHz NTSC	2
	OSC	17.28.37512 MHz PAL	alt
Y2	XIAL	Watch Type 32768 Hz	9
HY1	asst	Video Hybrid	5

ATTEMPT TO FORCE NODE NUMBERS VIA SEQUENCE



Jumpers and Stuff

REF	TYPE	DESCRIPTION	PAGE
JP1	B-08	Keyboard Reset	7
JP2	B-08	Memory Addr. C9 vs. Q8	2
JP3	B-08	Int'l. Memory Read vs. 1	3
TP1	PGT	RTC Frequency Test	9
CG12	TRIM	RTC Frequency Adjust	9
W1-2	0 Ohm	Ground Continuity FCC	8

Conn

REF	TYPE
CN1	DB9P
CN2	DB9P
CN3	RCA-J
CN4	RCA-J
CN5	DB23S
CN6	DB25P
CN7	DB25S
CN8	50 D1
CN9	DB23P
CN10	RCA-J
CN11	DIL-3
CN12	SIL-4
CN13	SIL-8
P1	EDGE8
CNX	RA-56
CNY	RA56

Signal Glossary

SIGNAL	DESCRIPTION (ARE:01)	PAGES
28MHZ	28.53636 MHz Master Clock	2
7MHZ	7.15509 MHz Processor Clock	2,5
AL23:11	Processor Address Bus (68000)	2,3,7,9
ACK	Data Acknowledge (Parallel Port)	6
AS	Address Strobe (68000)	2,7
AUDIN	Audio Input (RS232 Port)	4,6
AUDOUT	Audio Output (RS232 Jack)	4,6
BEER	Bus Error (68000)	2,7
PG	Bus Grant (68000)	2,7
BCACK	Bus Grant Acknowledge (68000)	2,7
BLISS	Bit Latch Slowdown (Chips)	2
BLIT	Chip Memory Access (Chips)	2,7
BR	Bus Request (68000)	2,7
BUSY	Device Busy (Parallel Port)	6
CASL/U	Column Address Strobe (DRAM)	2,3,9
CLK/CLKO	Color Clock / Quadrature (Chips)	2,4,7
CDAC	7.15509 MHz Quadrature Clock (Chips)	2,5,7
CHNG	Media Change (Floppy)	6,7
CLKRD/WR	Read-Line Clock Read / Write (RTC)	2,9
COMP	Monochrome Composite Video (Video)	5
CSYNC	Composite Sync (Video)	2,5
CIS	Clear to Send (RS232 Port)	6
DA[15:0]	Processor Data Bus (68000)	2,3,6,7,9
DIA	Step Direction (Floppy)	6,7
DKRD	Disk Read Data (Floppy)	4,7
DKWD	Disk Write Data (Floppy)	4,7
DKWL	Disk Write Enable (Floppy)	4,7
DMAL	Chip DMA Request Line (Chips)	2,4
DRA[8:0]	DRAM Address Bus (DRAM)	2,3,9
DRD[15:0]	DRAM Data Bus (DRAM)	2,3,4,9,9
DSR	Data Set Ready (RS232 Port)	6
DTACK	Data Transfer Acknowledge (68000)	2,3,7
DIR	Data Terminal Ready (RS232 Port)	6
E	Peripheral Enable Clock (68000)	2,5,7
EXRAM	Expansion Memory Present	2,3,9
FC[12:0]	Function Code (68000)	2,7
FIRFO/1	Fire Button 0/1 (Joysticks)	2,5,6
HIT	Processor Halt (68000)	2,7
HSYNC	Horizontal Sync (Video)	2,5,6
INDEX	Index Pulse (Floppy)	6,7
INT[2,3,6]	Interrupt Request (Chips)	2,4,6,7
IORESET	I/O Reset	6,7
IPL[12:0]	Interrupt Priority Level (68000)	2,4,7
KBCLOCK	Keyboard Clock (Keyboard)	6
KBDATA	Keyboard Data (Keyboard)	6
KBRESET	Keyboard Reset (Keyboard)	6
LDSDUDS	Upper / Lower Data Strokes (68000)	2,7
LED	Power On LED / Audio Filter Disable	4,6

SIGNAL	DESCRIPTION
LEFT/RIGHT	Left / Right
MTR	Motor
MTRQ	Motor
MOV/MOH	Mouse
MIV/MIH	Mouse
OVL	Overlap
OVR	Overlap
PIXELSW	Genlock
POT0X/OY	Pot. L
POT1X/OY	Pot. L
POT1X/OY	Pot. L
POT1X/OY	Pot. L
PPD[7:0]	Parallel
RAMEN	RAM Enable
REGEN	Chip Enable
RASO/i	Row Address
RDY	Drive
RESET	General
RGA[8:1]	Register
R/G/B	Red /
R1	Ring
ROMEN	ROM Enable
RIS	Request
RST	Process
RXD	Receive
RW	Process
SEL	Select
SEL[3:0]	Drive
SIDE	Side
STEP	Step
TRKD	Track
TXD	Transmit
VMA	Valid
VPA	Valid
VSYNC	Vertical
WE	Write
WPROT	Write
XCLK	External
XCLKEN	External
XRDY	External

connectors

	DESCRIPTION	PAGE
P	Mouse/Joystick 1	2
P	Mouse/Joystick 2	2
J	Right Audio Output	4
J	Left Audio Output	4
3S	External Floppy	7
5P	RS232 Serial Port	6
5S	Parallel Printer Port	6
GIN	Power Supply Connector	6
BP	Video Output	5
J	Composite Video	5
34	Internal Floppy Signal	7
4	Internal floppy Power	8
8	Keyboard Connector	6
86	Expansion Connector	7
6H	Mem. Exp. Main-Board	3
6-F	Mem. Exp. Sub-Board	9

ECO Log

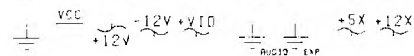
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870302	Change R1 resistor for FTZ	10/09/87
870207	More FCC Changes	09/04/87
880238	Add E Clock Termination	03/03/88

DESCRIPTION (AREA)	PAGES
Right Audio (Audio)	4
On (Floppy)	4,6
On - Drive 0 (Floppy)	4,6,7
0 Quadrature V/H (Joysticks)	5
1 Quadrature V/H (Joysticks)	5
Load ROM over RAM	2,6
Slide System Decoding	2,7
Lock Pixel Switch (Video)	5
Lines 0 X/Y (Joysticks)	4,5
Lines 1 X/Y (Joysticks)	4,5
Out (Parallel Port)	6
Parallel Port Data (Parallel Port)	6
Enable (Chips)	2
Register Enable (Chips)	2
Address Strobe (DRAM)	2,3,9
Ready (Floppy)	6,7
Reset	6,7
ster Address Bus (Chips)	2,4,5
/ Green / Blue (Video)	5
Indicate (RS232 Port)	5
Enable (ROM)	2,3
est to Send (RS232 Port)	6
essor Reset (68000)	2,4,7
ive Data (RS232 Port)	4,6
essor Read/Write (68000)	2,6,7
ct (Parallel Port)	6
e Select (Floppy)	4,6,7
Select (Floppy)	6,7
In/Out Command (Floppy)	6,7
k Zero Sense (Floppy)	6,7
mit Data (RS232 Port)	4,6
d Memory Address (68000)	2,6,7
d Peripheral Address (68000)	2,7
ical Sync (Video)	2,5,6
e Enable (DRAM)	2,3,9
e Protect Sense (Floppy)	6,7
rnal Genlock Clock (Video)	2,5
rnal Clock Enable (Video)	2,5
rnal Data Ready	2,5

Key Components

REF	CHIP	DESCRIPTION	PAGE
U1	63000	68000 Processor	2
U2	8370	Fat Agnus - NISC	2
	8371	Fat Agnus - PAL	alt
	8372	Agnus HR	alt
U3	8364	Paula	4
U4	8362	Denise	5
	8373	Denise HR	alt
U5	5719	Gary	2,4
U6	asst	RAM 128Kx16, 200 nS	3
U7-8	8520	Ango VIA, 1 MHz	6
U9	6242B	Ck1 Bus RTC	9
U14	L247	BIMOS Op-Amp	4
	L284	BIMOS Op-Amp	alt
U38	1488	EIA Line Driver	4
U39	1489	EIA Line Receiver	4
U42	N555	Timer	7
U16-31	asst	DRAM 256Kx1, 150 nS	3
U48-63	asst	DRAM 256Kx1, 150 nS	9
X1	03C	17.28.63636 MHz NISC	2
	05C	17.28.37512 MHz PAL	alt
Y2	XIAL	Watch Type 32768 Hz	9
HY1	asst	Video Hybrid	5

ATTEMPT TO FORCE NODE NUMBERS VIA SEQUENCE

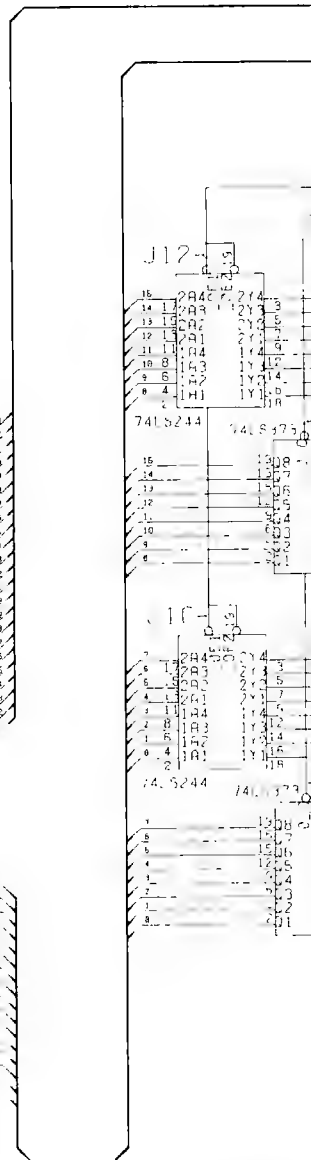
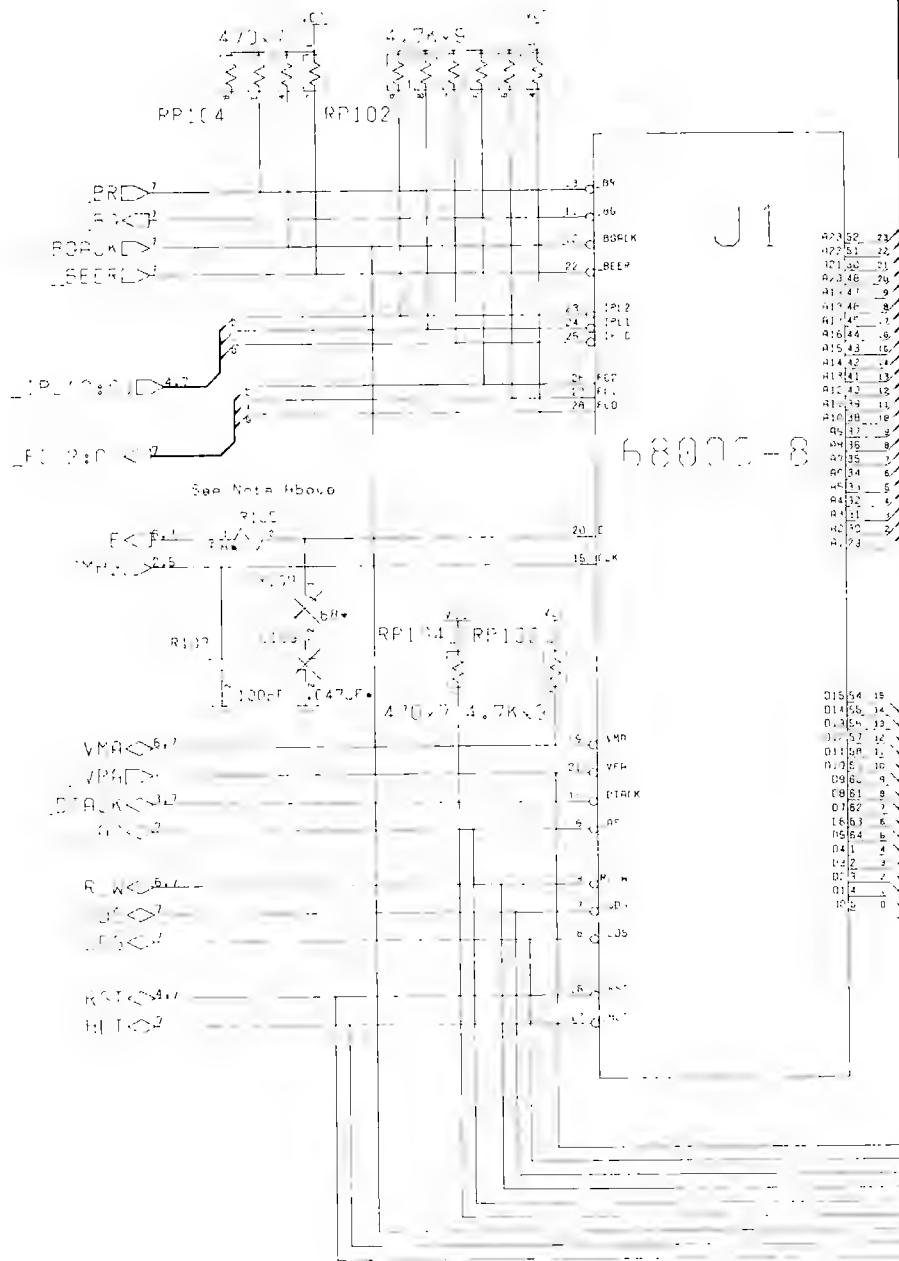


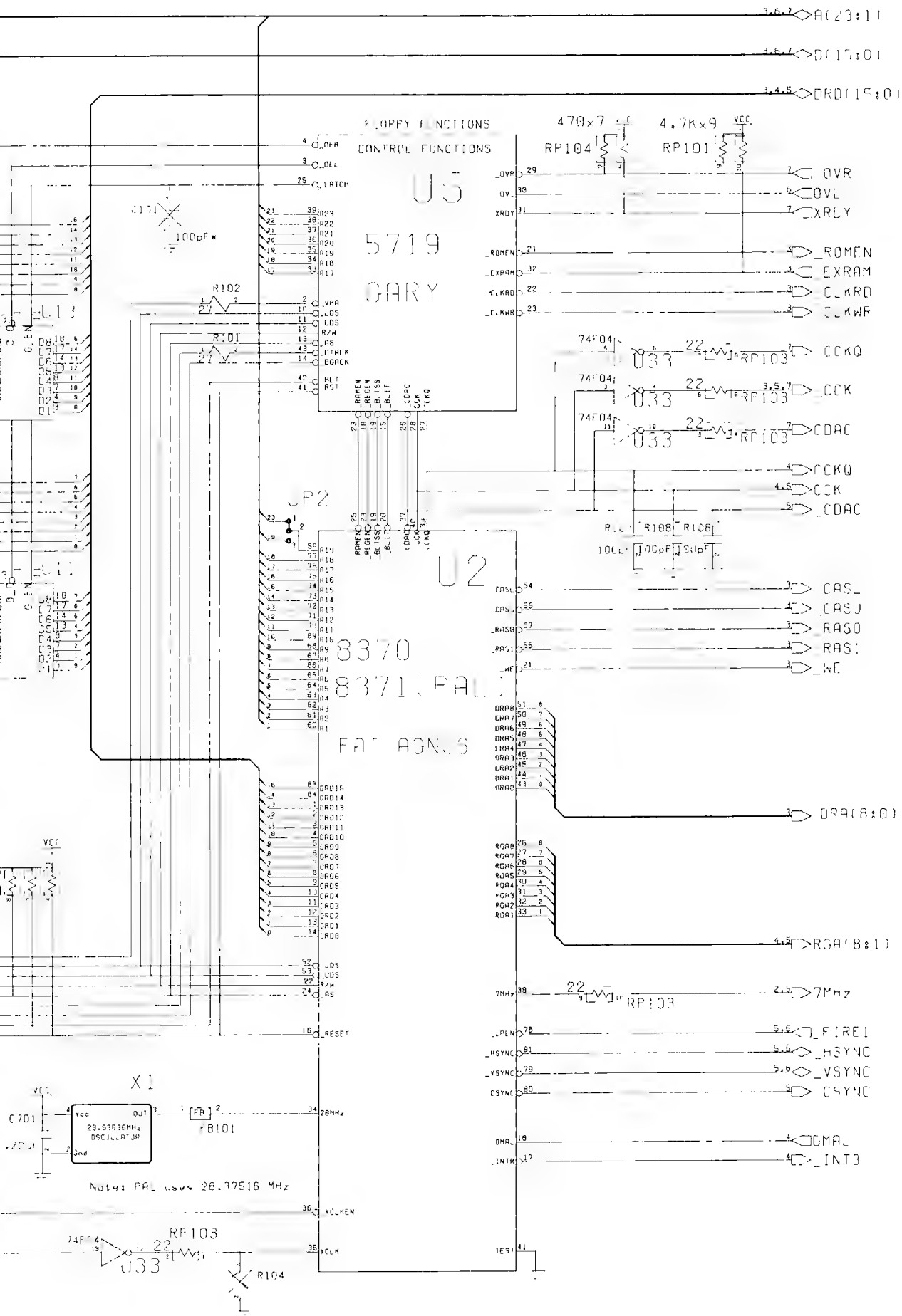
Schematic #312511-02, Rev. 5
Sheet 2 of 9

Note: R103-104, 106-108, 011 are for EMI Control and may be loaded with funny things...

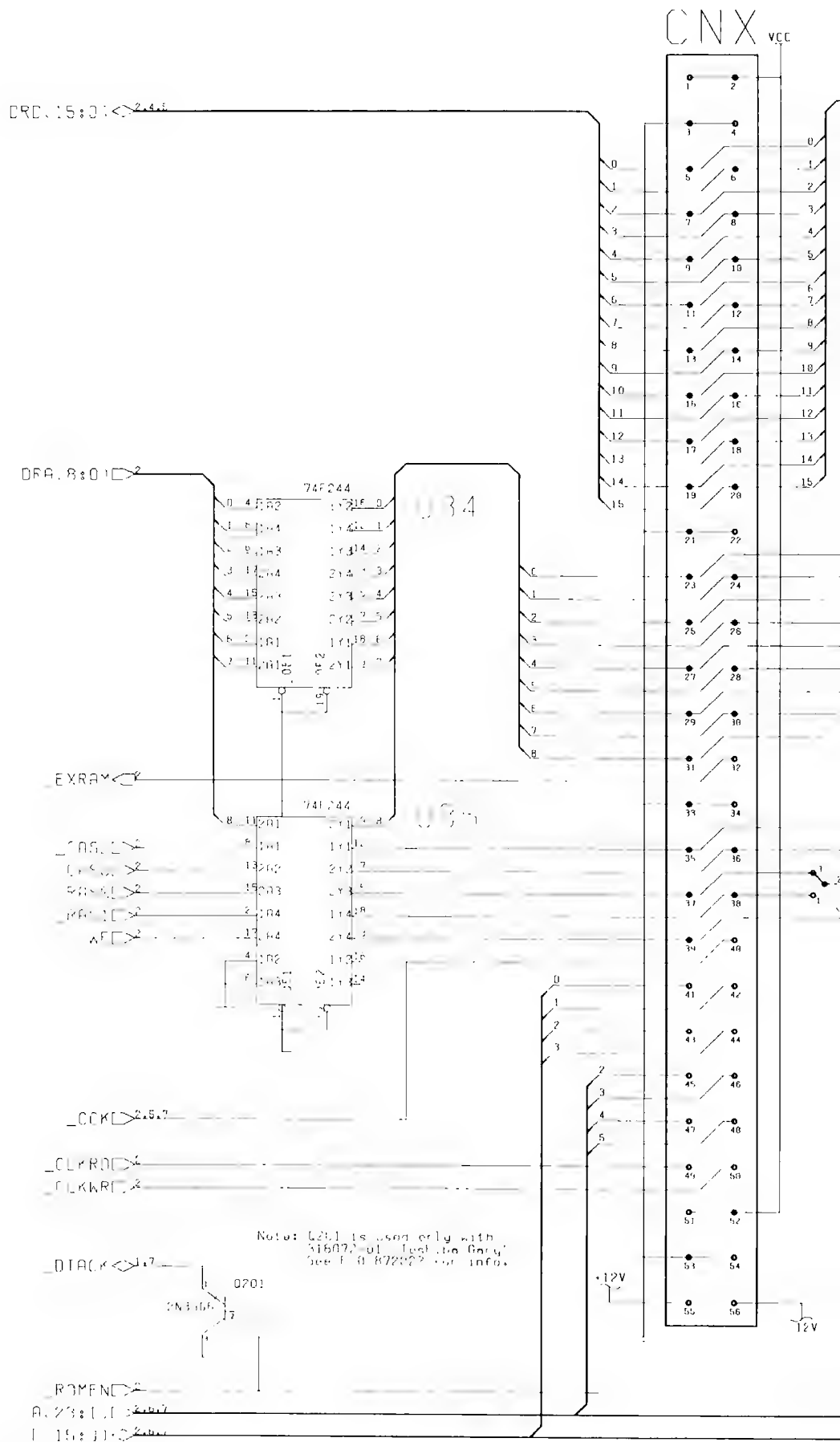
42 controls where expansion ran over 10%
to 100 (default = 215) (80%)

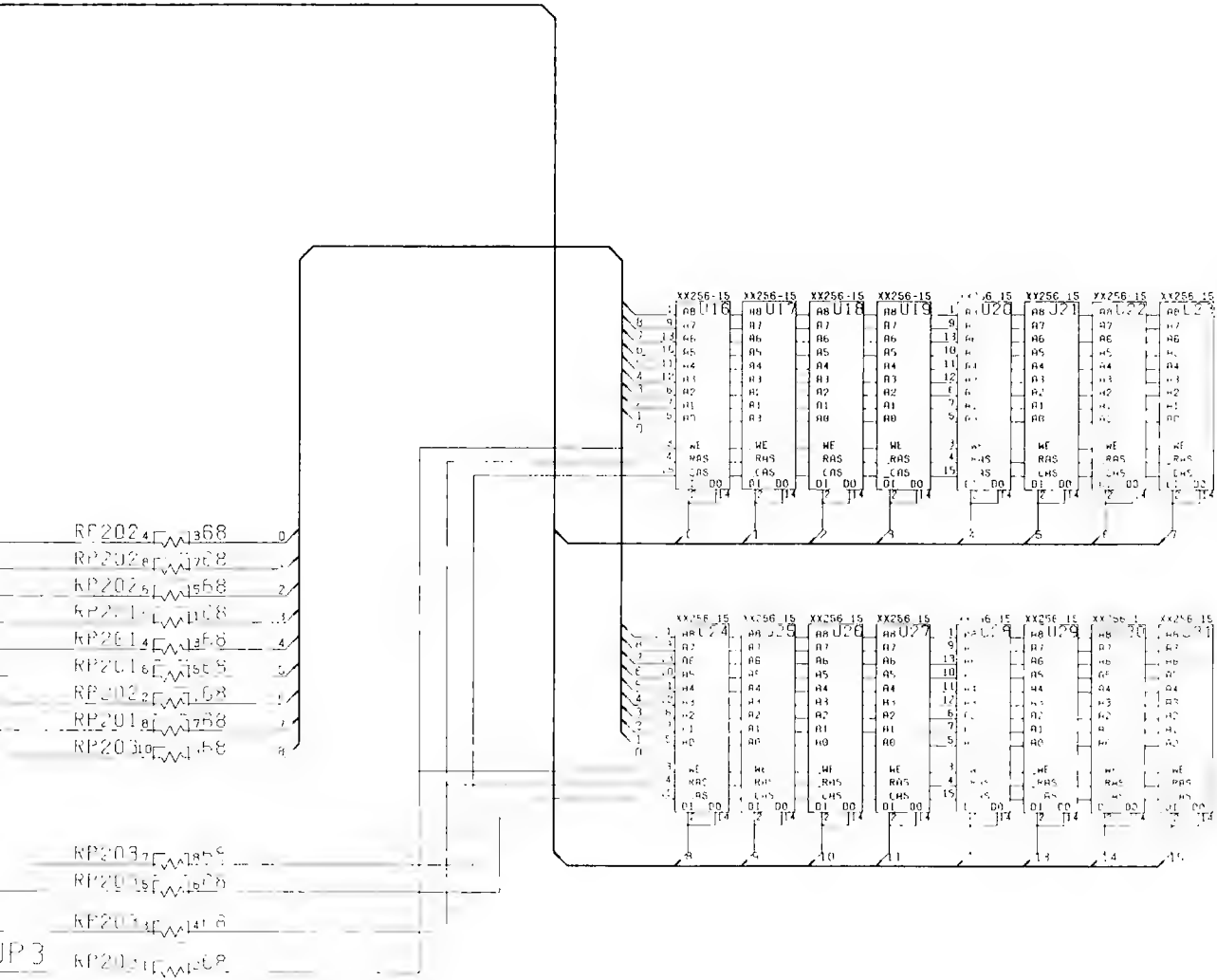
E:03/010, R:15 Detail: See E:03/010283
 1.1 Filter: 1000000 per E:03/010283


$$X \subseteq K \{ N, \tau \}^{\leq 5}$$
$$f(K) \geq \frac{1}{2} - \dots$$

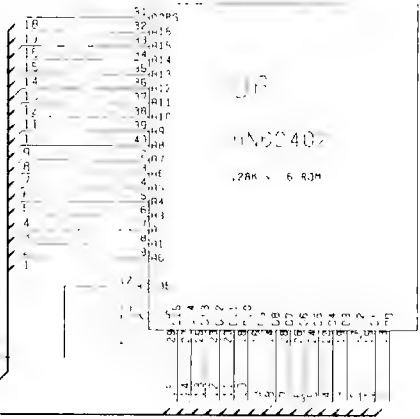


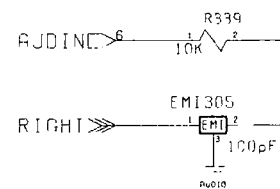
Schematic #312511-02, Rev. 5
Sheet 3 of 9



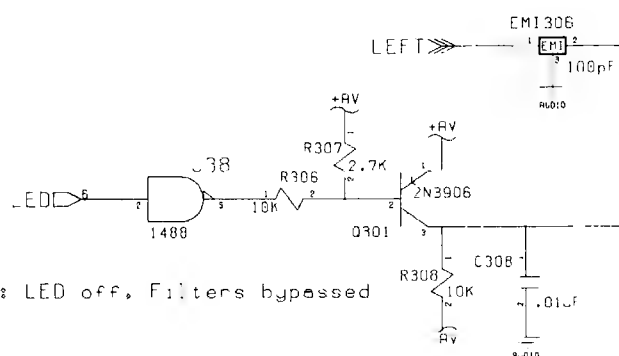


Note: JP3 swaps internal 16 expansion card

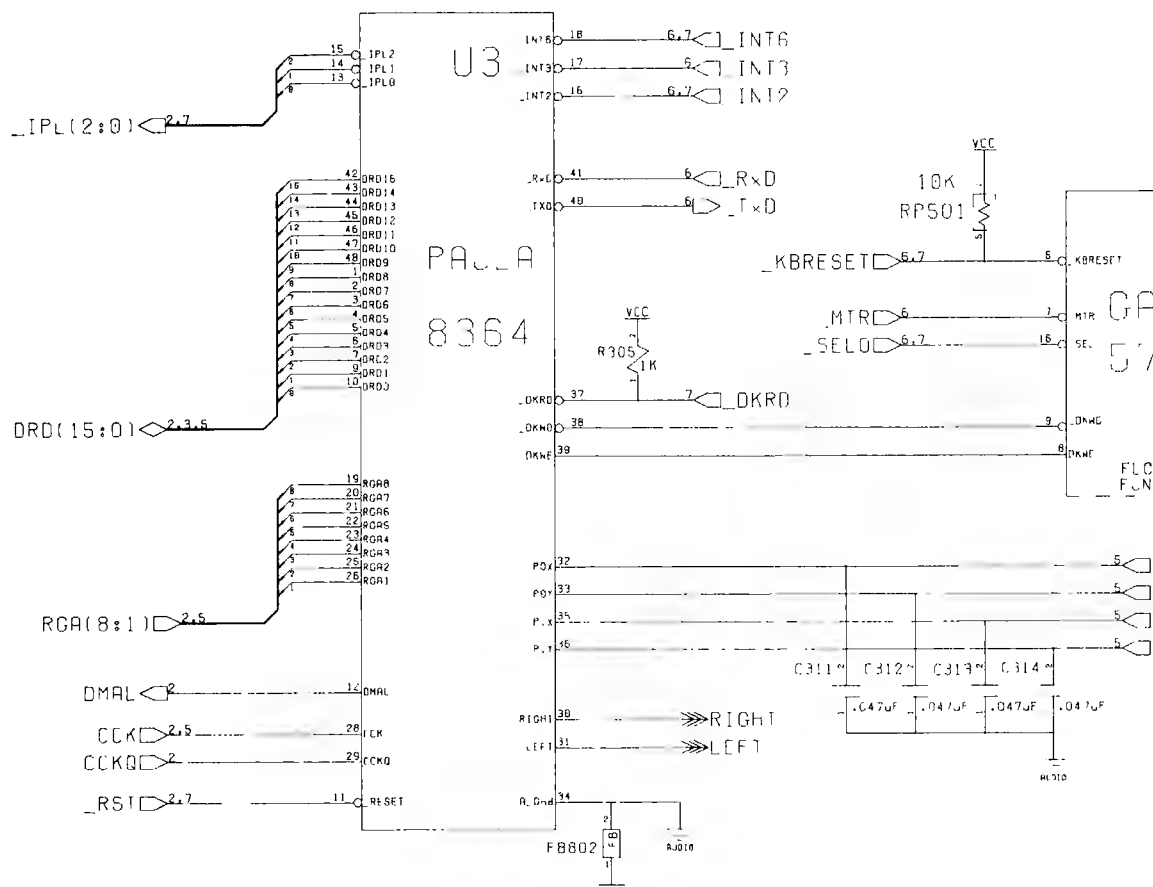




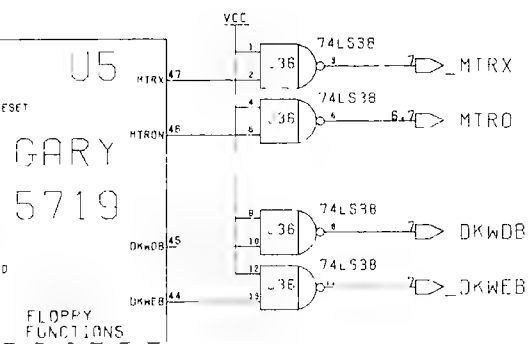
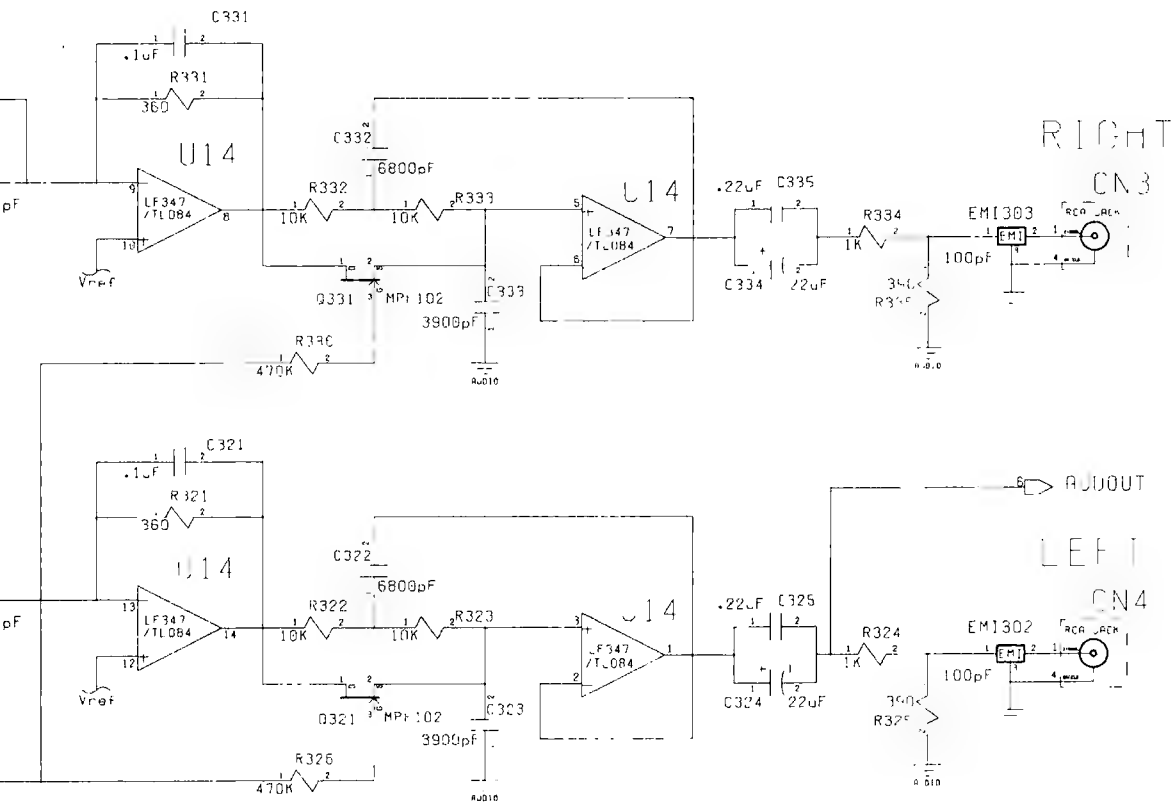
AUDIO FILTERS



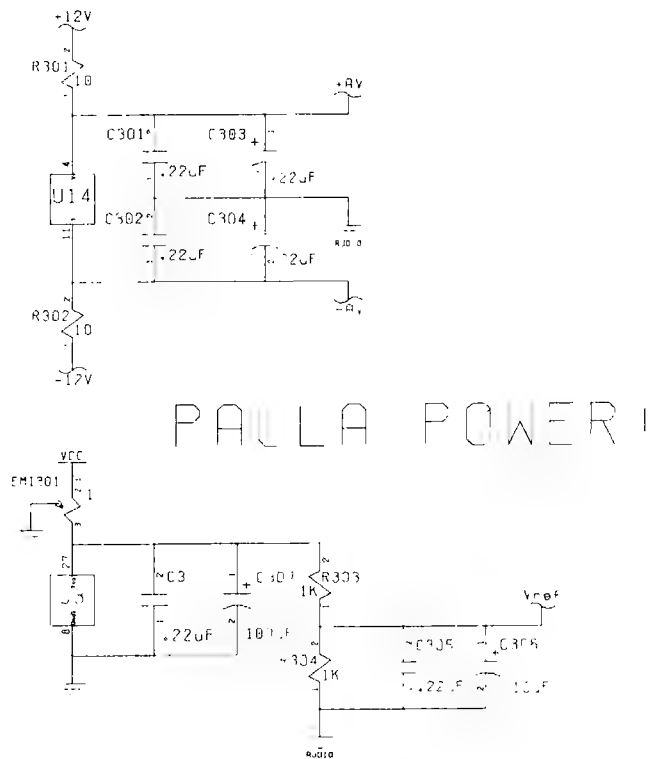
Note: LED off, Filters bypassed

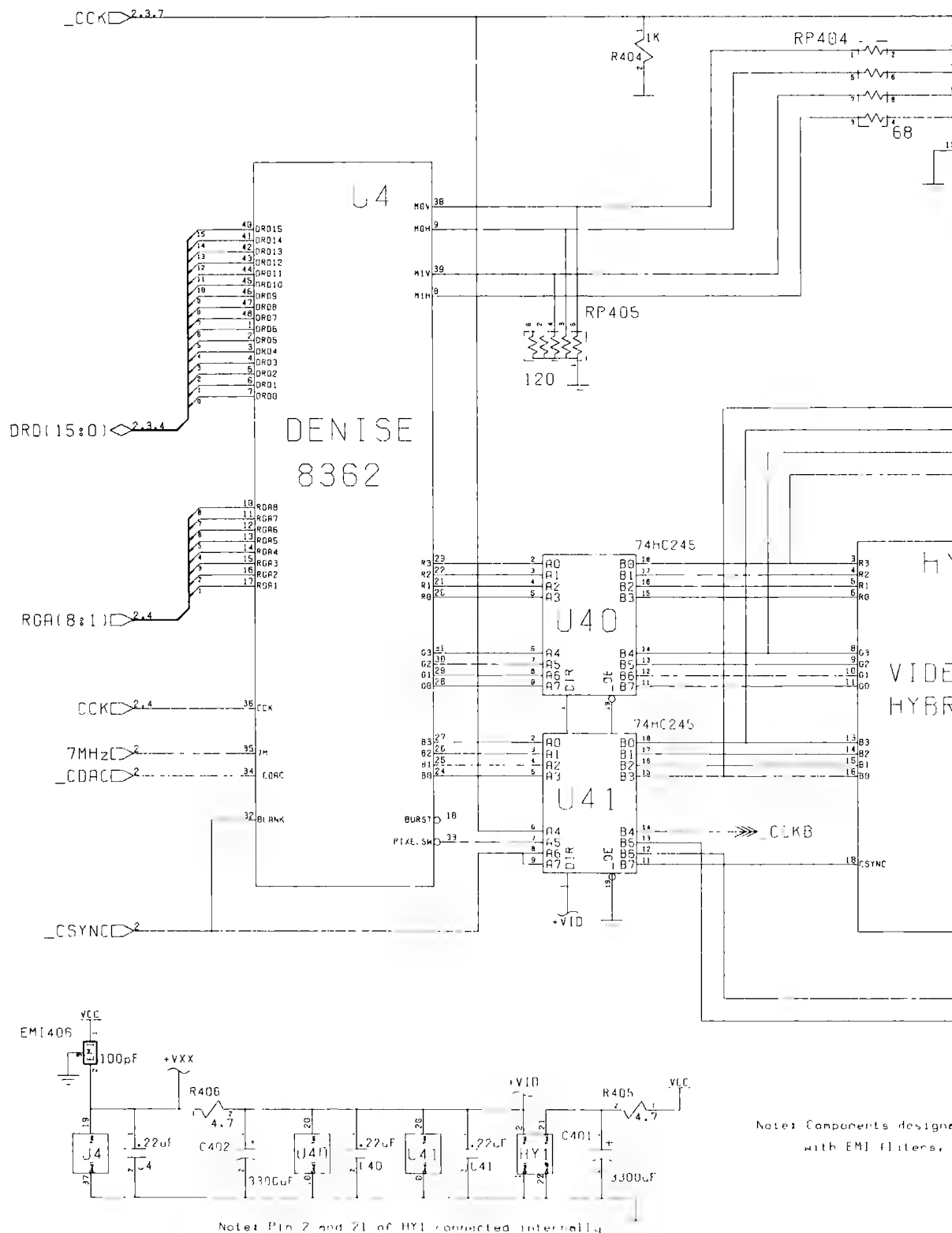


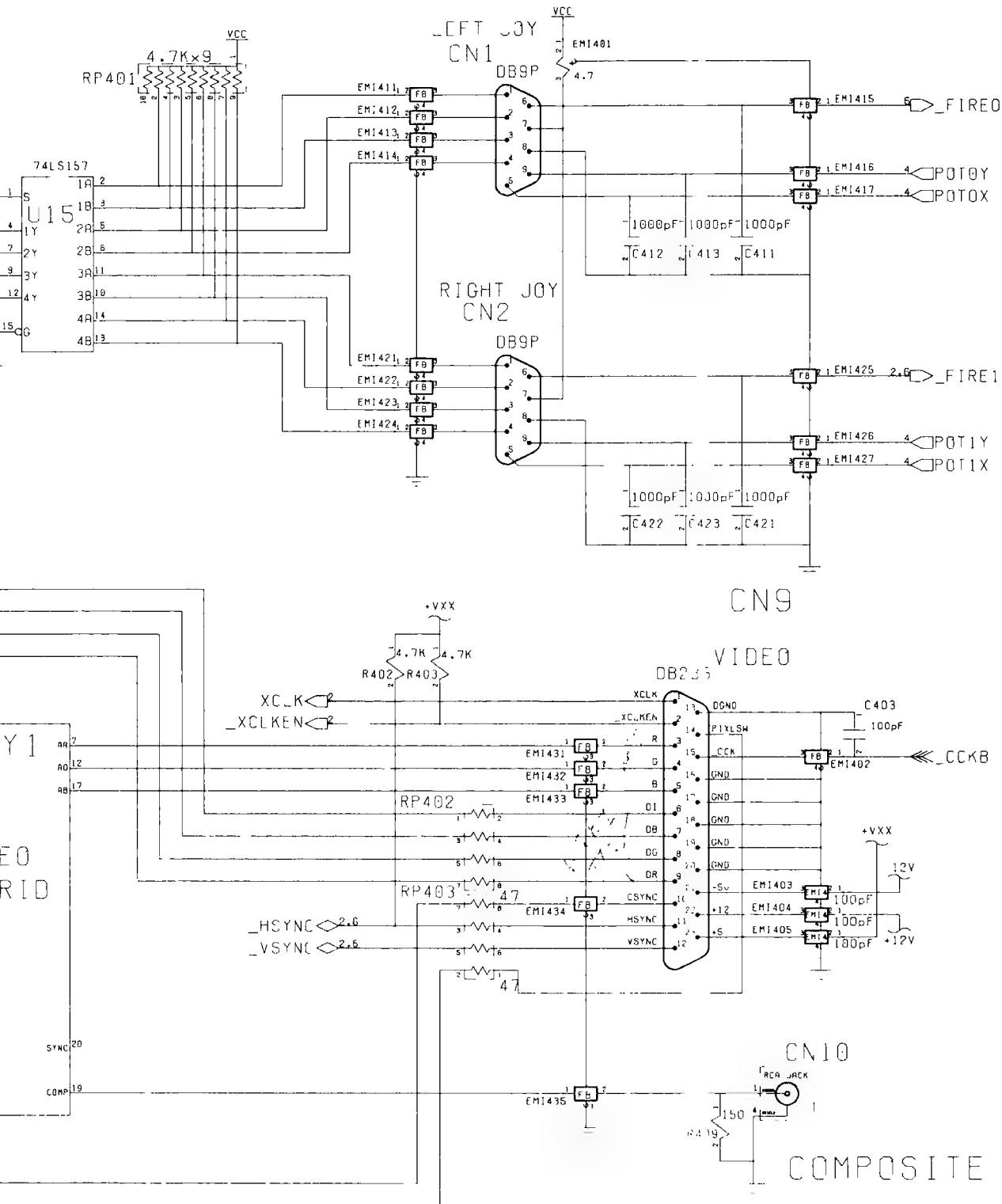
Note: Ground interconnection near audio jacks.



5<POT0X
5<POT0Y
5<POT1X
5<POT1Y



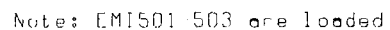




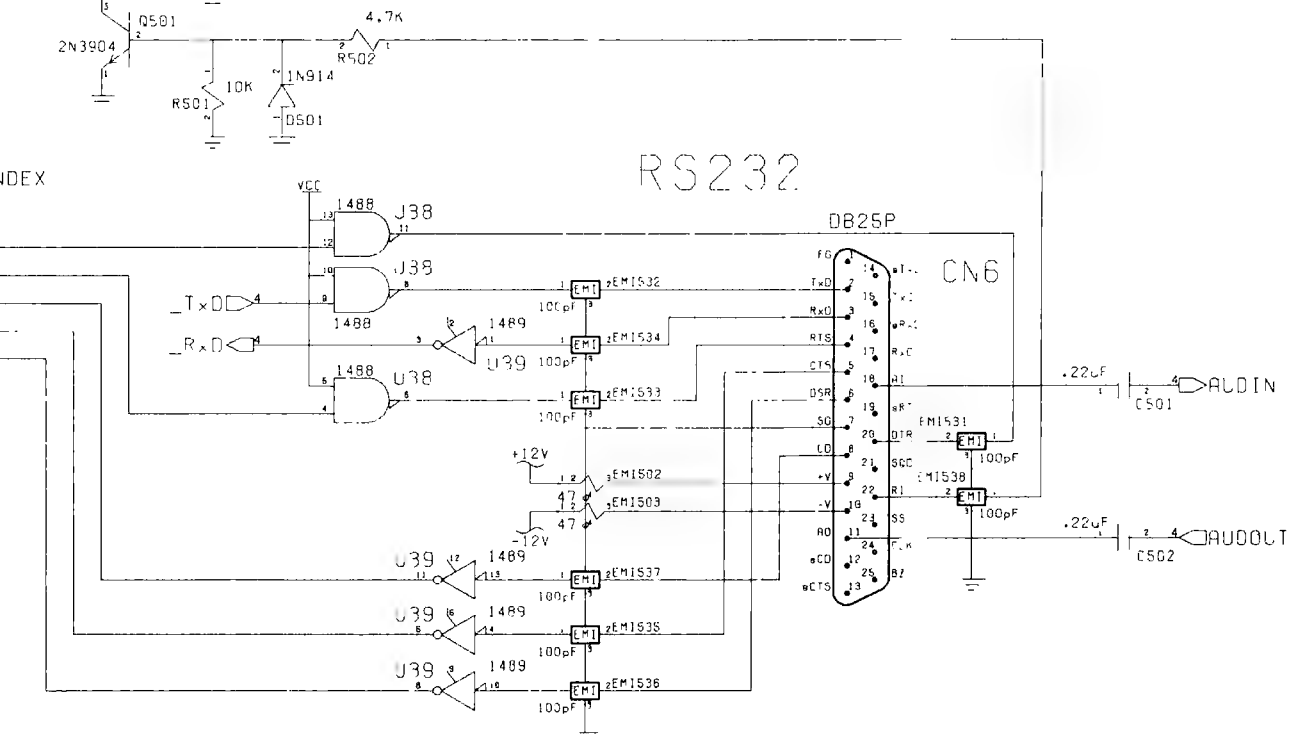
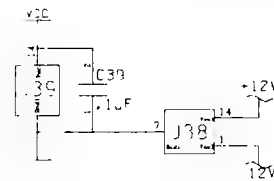
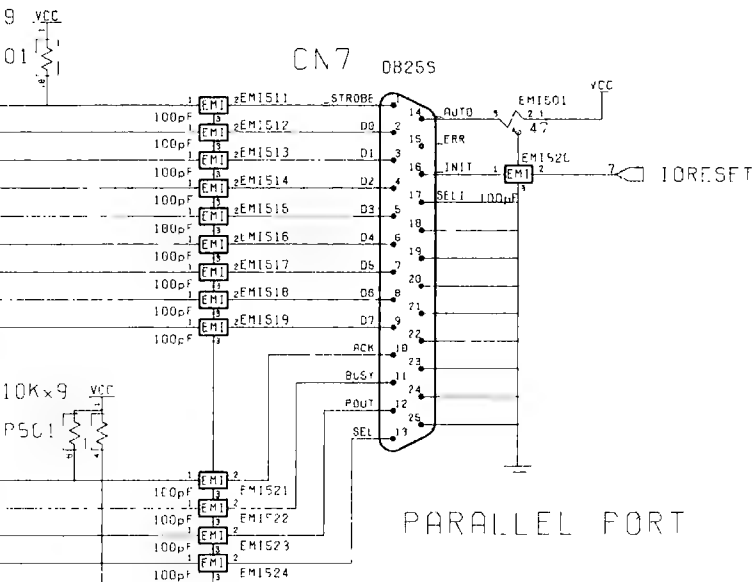
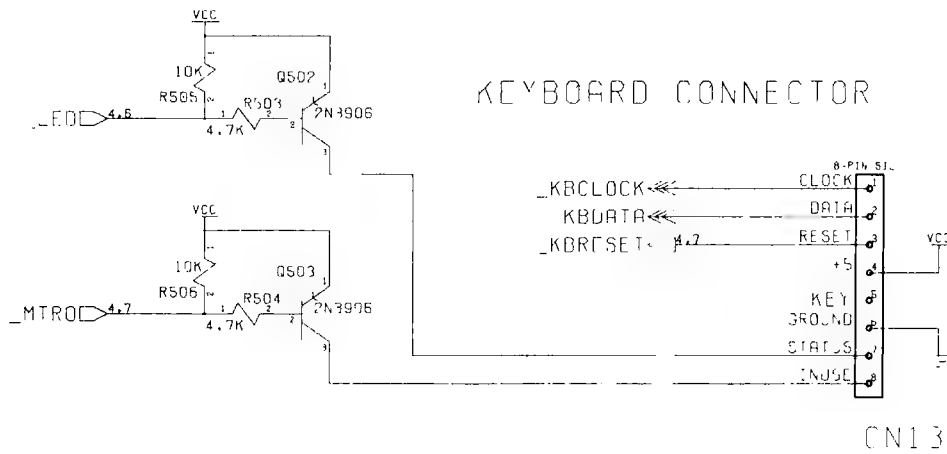
Note: R409 Controls Composite output level for 39020-01 Hybrid.

ated as EM1xxx may be loaded
ferrite beads or resistors!

Sheet 6 of 9



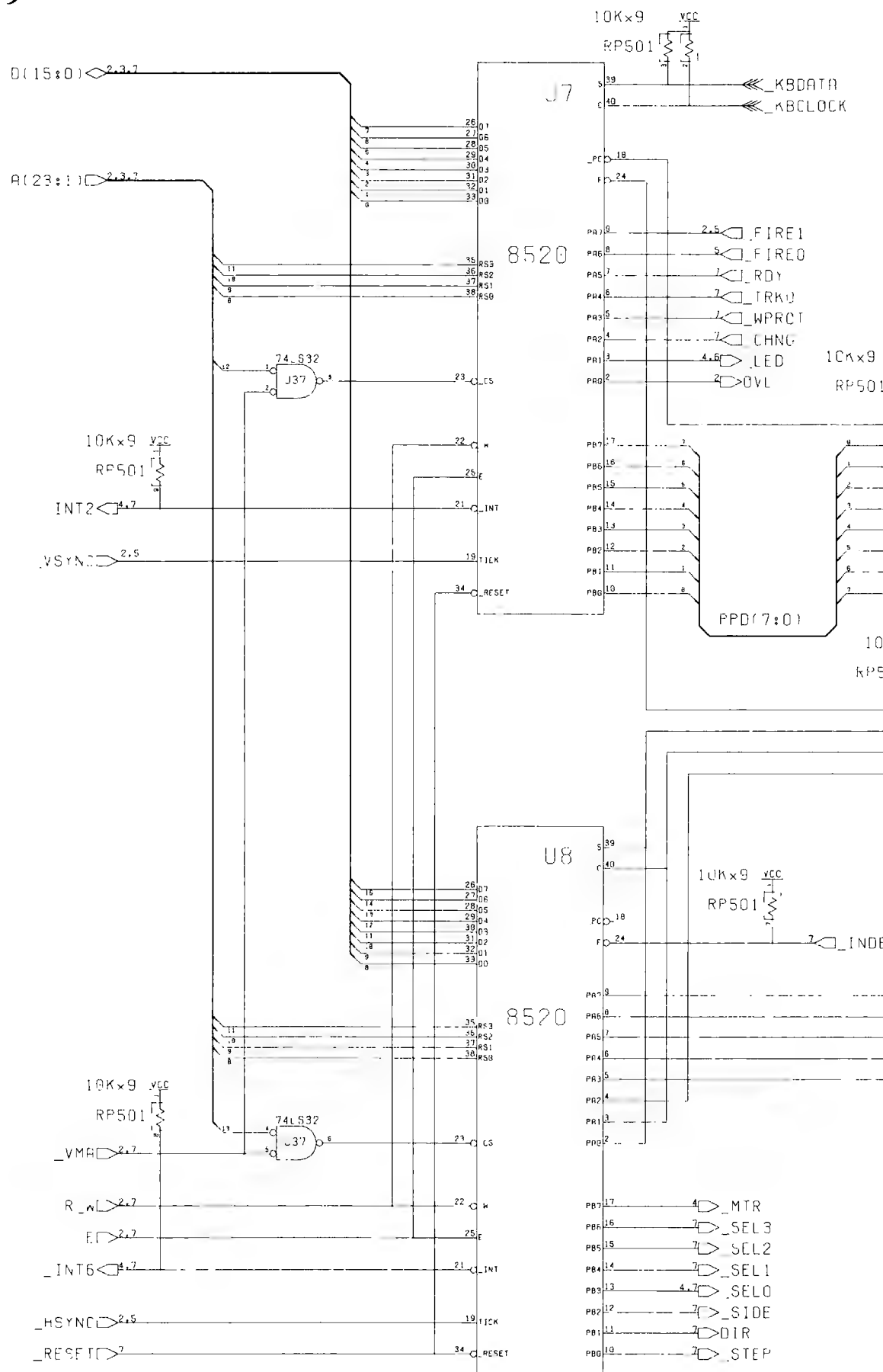
Note: EMI501-503 are loaded



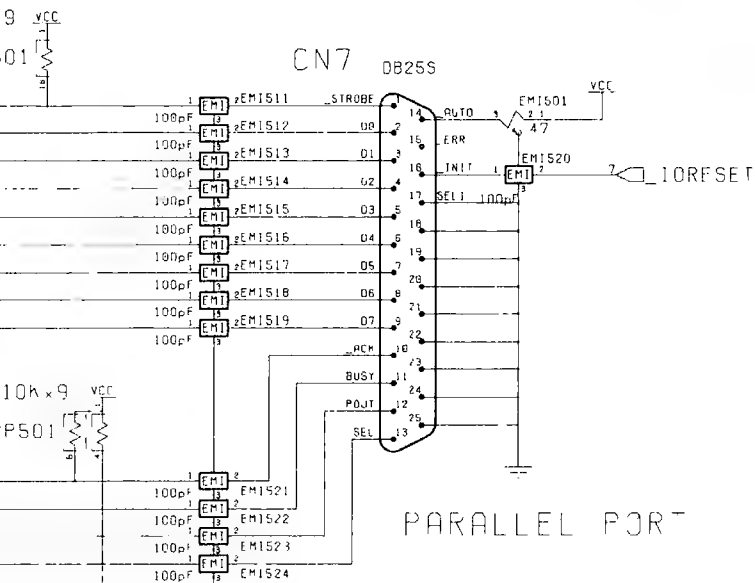
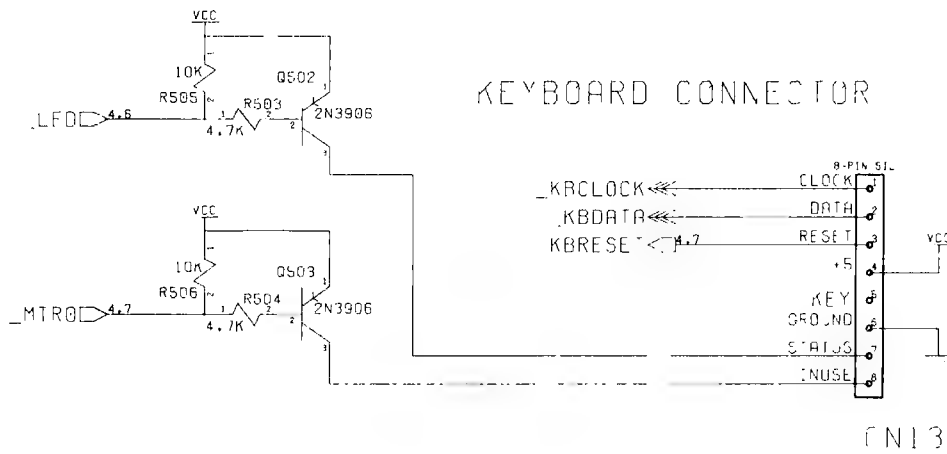
with 47 Ohm 1/2 W resistors

Schematic #312511-02, Rev. 5

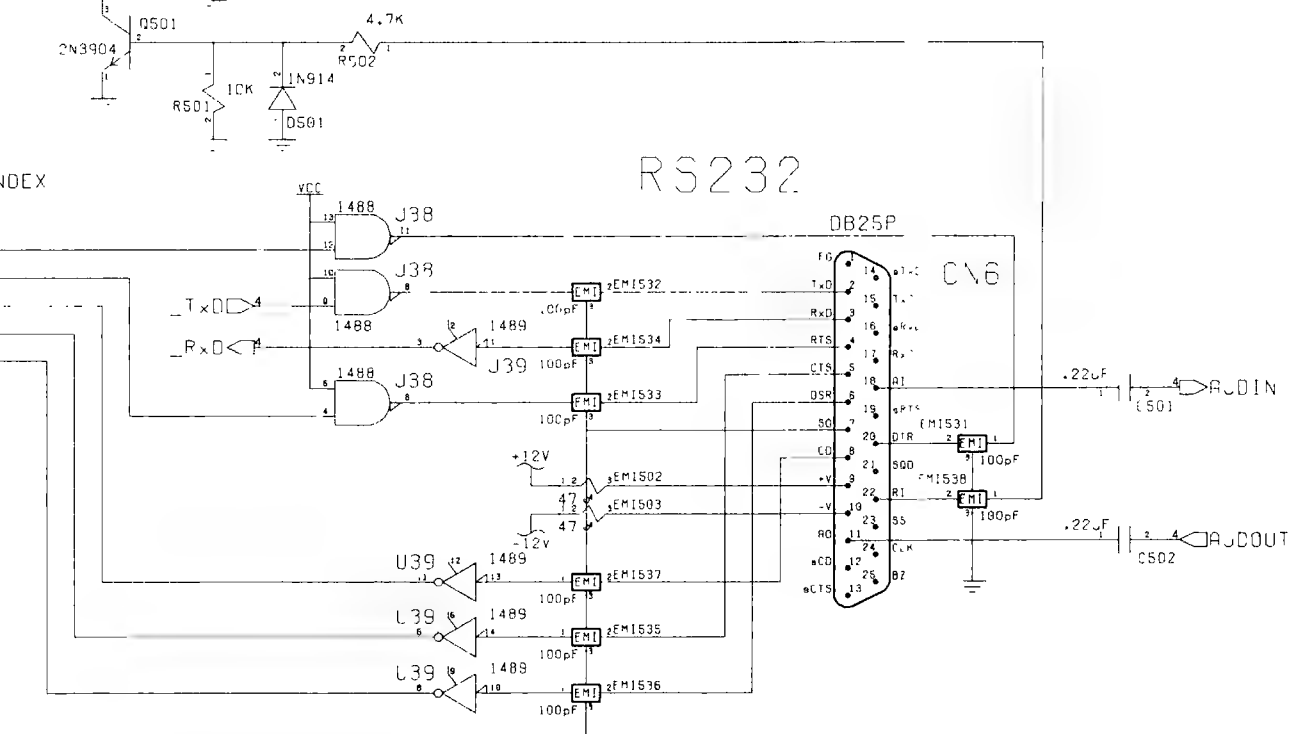
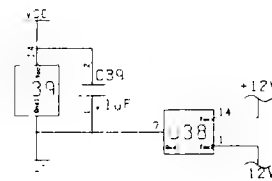
Sheet 6 of 9



Note: EMI501-503 are loaded w

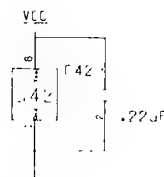
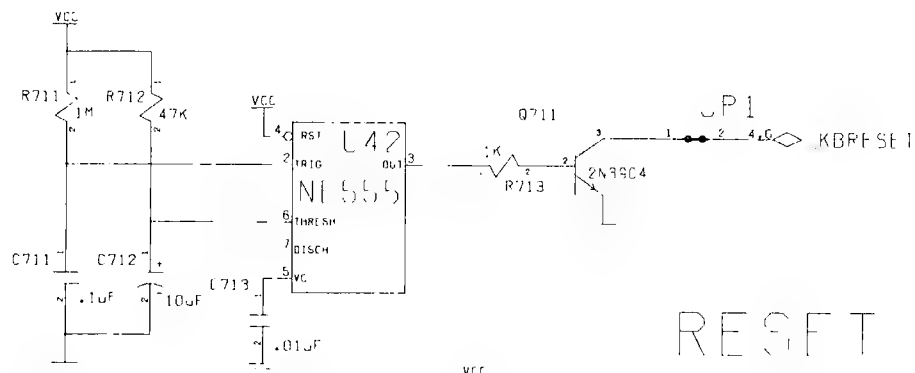
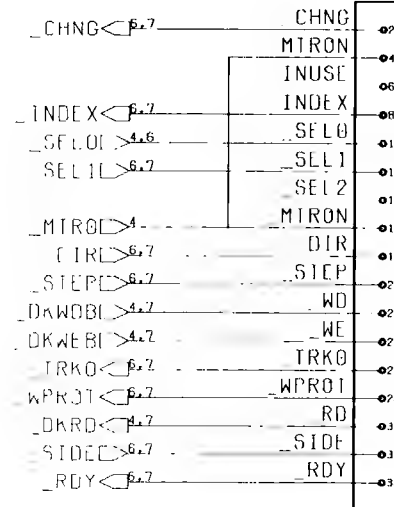
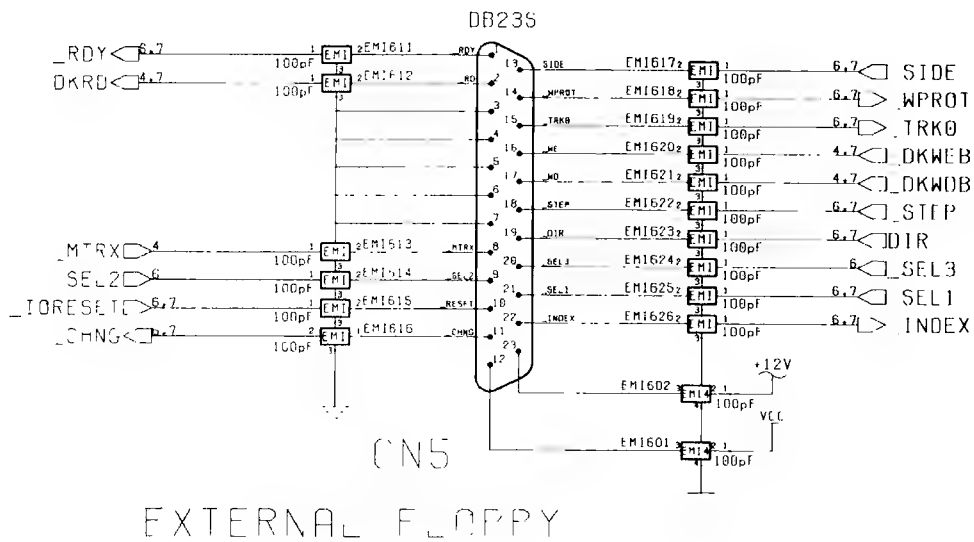


RS232 DECOUPLING

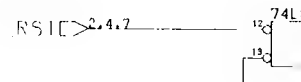


with 47 Ohm 1/2 w resistors

Schematic #312511-02, Rev. 5
Sheet 7 of 9

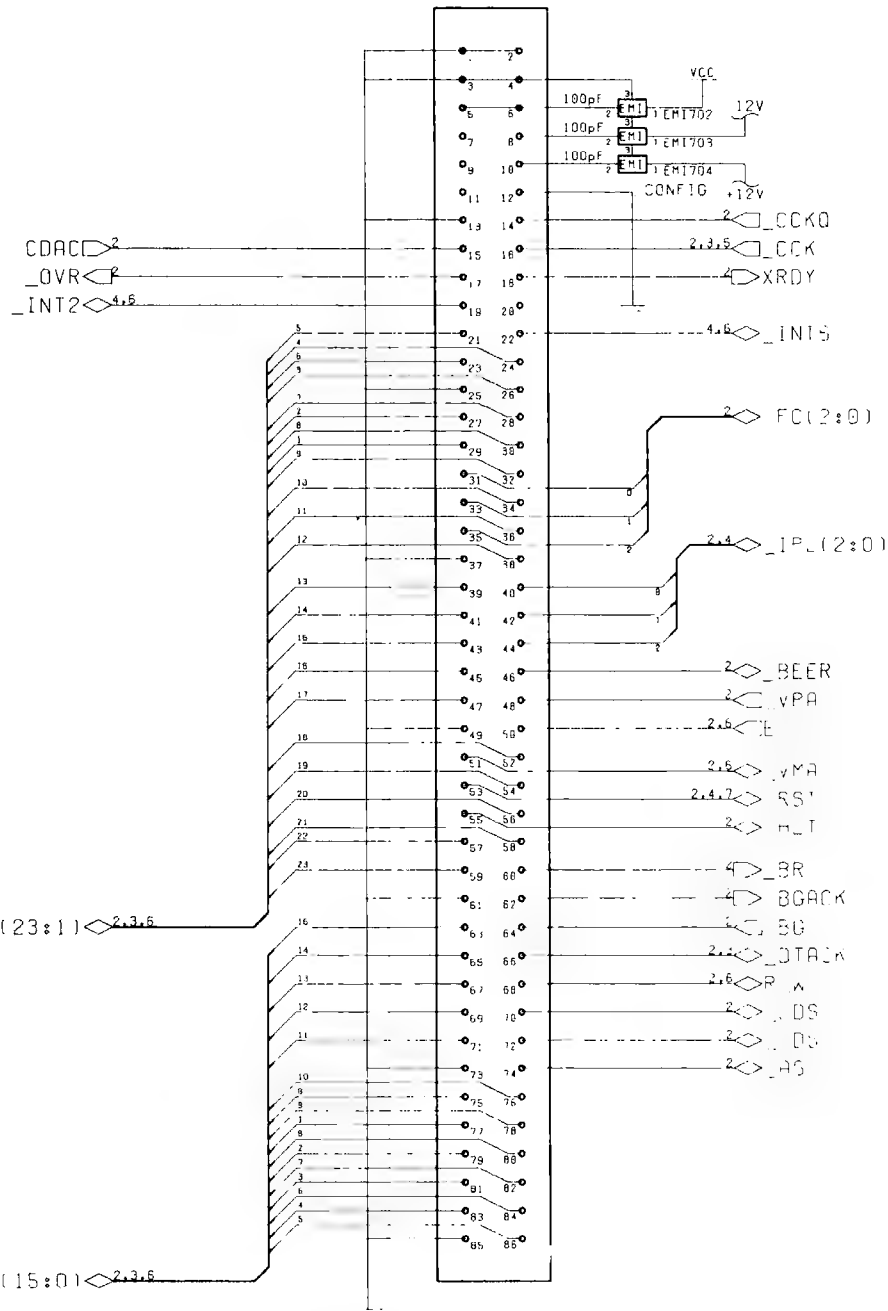


RESFT ACTIO



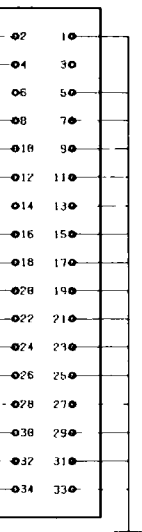
EXPANSION

P1

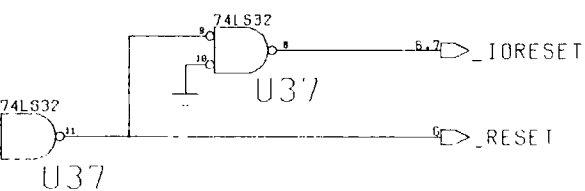


AL FLOPPY

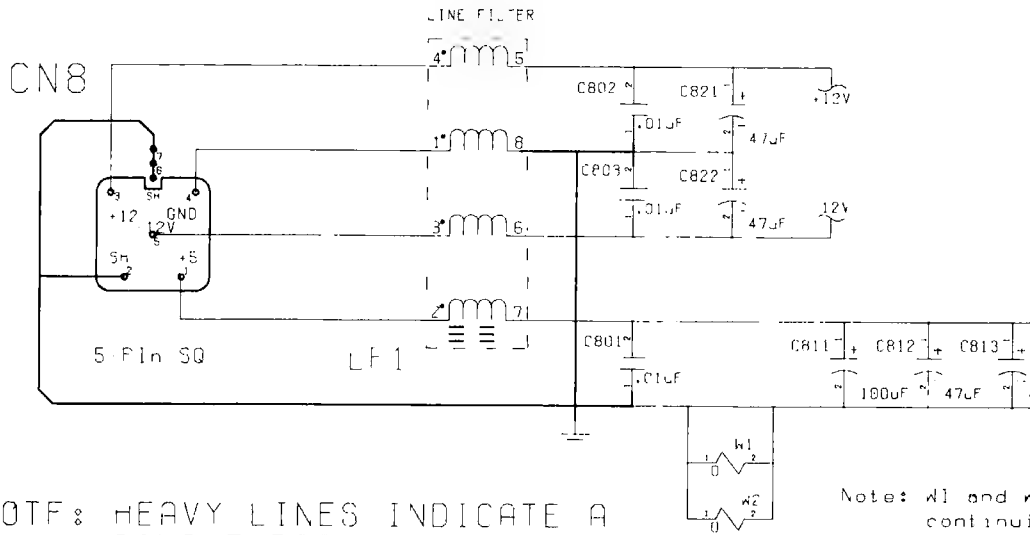
CN11



ON

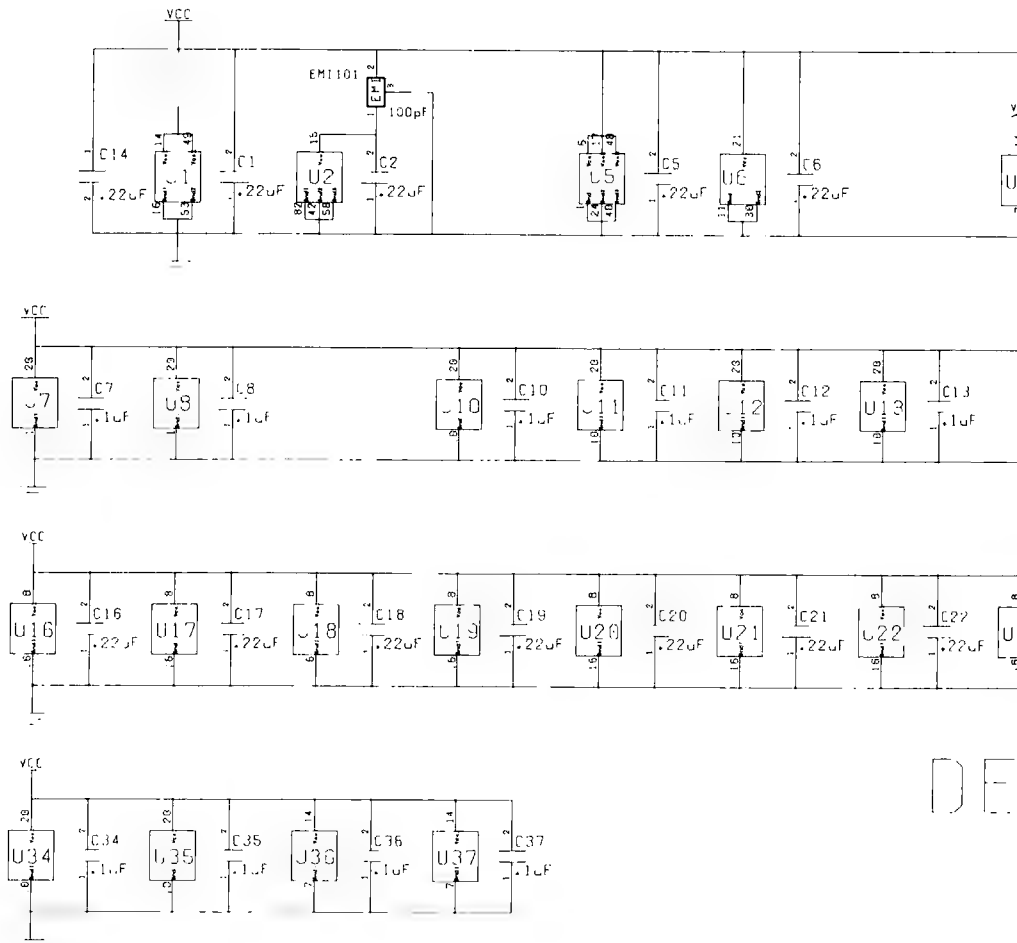


POWER INPUT



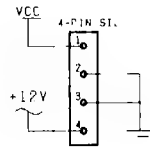
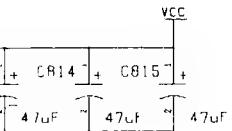
NOTE: HEAVY LINES INDICATE A SINGLE POINT CONNECTION

Note: W1 and W2 are continuous



DE

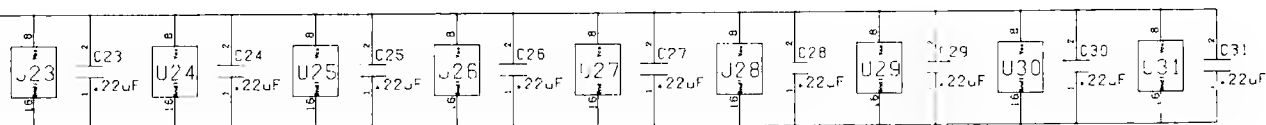
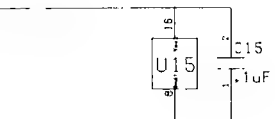
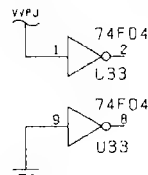
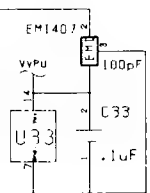
FLOPPY POWER



CN12

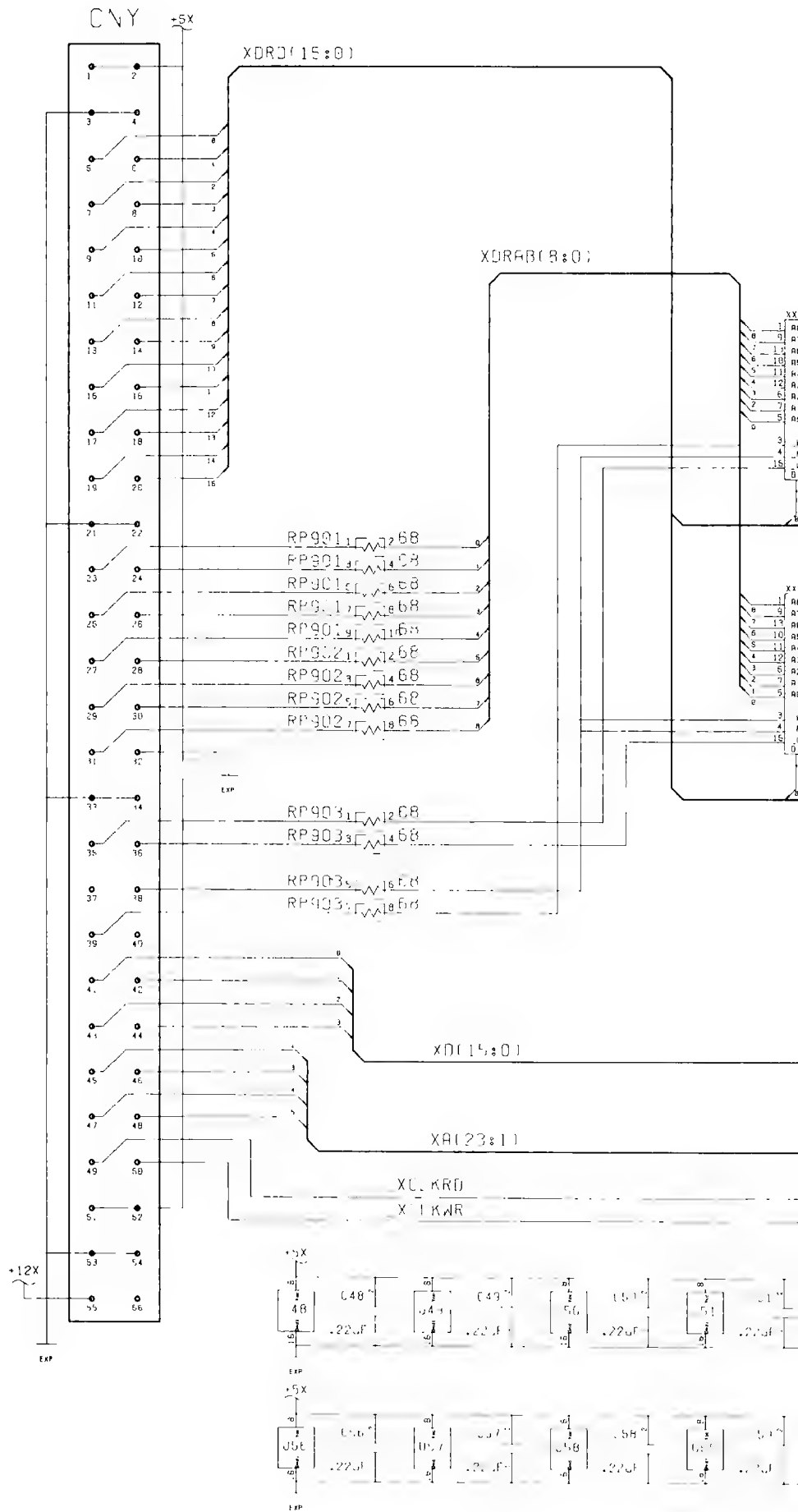
W2 are ground plane
city jumpers. (FCC)

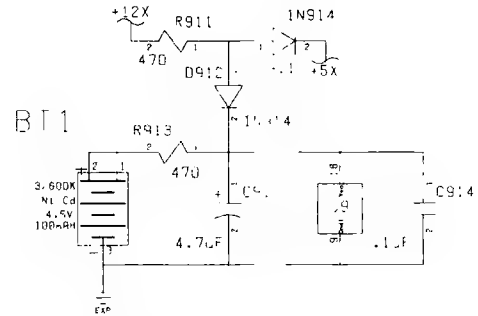
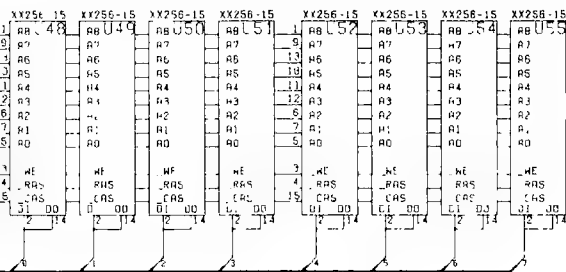
SPARE 3



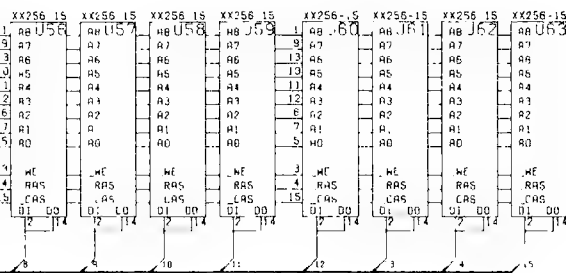
DECOUPLING

Schematic #312511-02, Rev. 5
Sheet 9 of 9

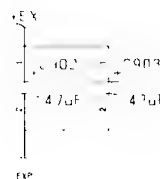
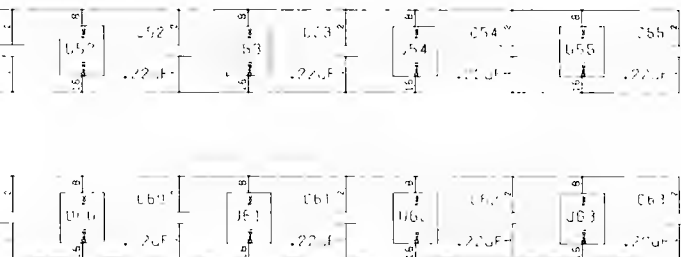
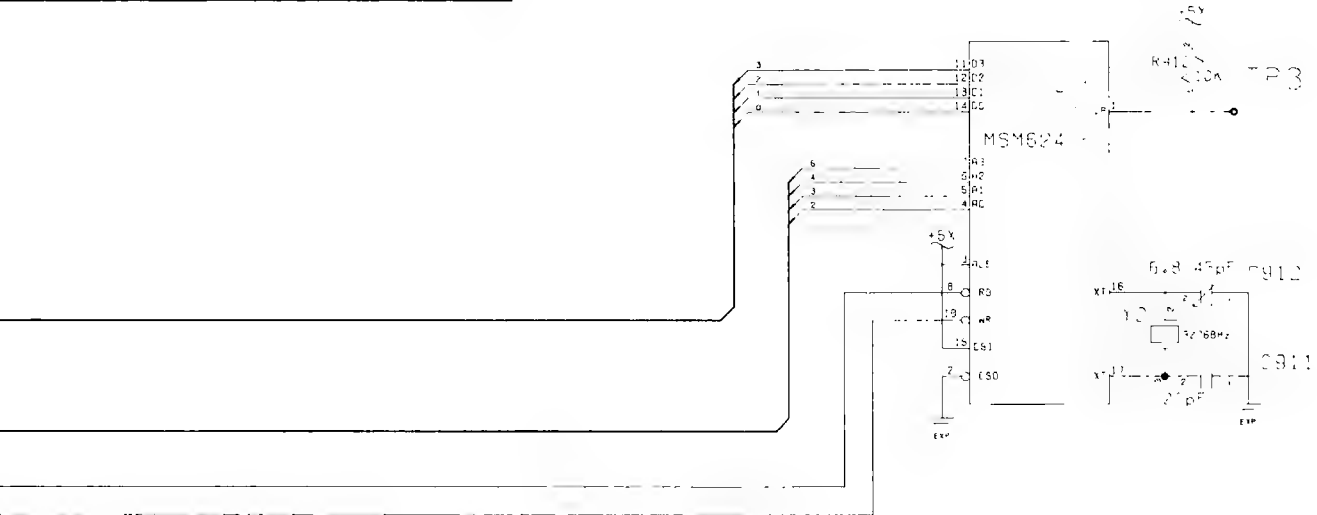




Real Time Clock



Real Time Clock



COMPONENT PARTS LIST **PCB ASSEMBLY #312510, AMIGA A500, REV6A/7**

312510-07 PCB ASSEMBLY, A500 NTSC

312510-08 PCB ASSEMBLY, A500 PAL

Commodore part numbers are provided for reference only and do not indicate the availability of parts from Commodore. Industry standard parts (Resistors, Capacitors, Connectors) should be secured locally. Approved cross-references for TTL chips, Transistors, etc. are available in manual form through the Service Department, order #314000-01.

IC COMPONENTS			DIODES		
901882-01	INTERFACE MC1488	U38	900850-01	1N4148	D501
901883-03	INTERFACE MC1489	U39	390017-01	1N914	D501
390086-01	LINEAR LF347/TL084	U14	FILTERS		
901523-01	LINEAR NE555	U42	251842-02	EMI FILTER, 100pF	E511-E519,E421-E524, E611-E626
390084-03	MC68000 OMHz	U1	390275-02	EMI FILTER, 150pF	E402,E434,E532,E534
318072-01	MOS 5719 R2 GARY	U5	390297-01	EMI FILTER, 270pF	E305,E306
252126-02	MOS 8362 R8 DENISE	U4	390297-04	EMI FILTER, 470pF	E415-E417,E425-E427, E441-E444,E520,E531, E533,E535-E538
252127-02	MOS 8364 R7 PAULA	U3	390275-01	EMI FILTER, 6800pF	E302,E303,E411-E414, E421-E424
318069-02	MOS 8372 R3 AGNUS HR	U2	390297-05	EMI FILTER .01uF	E101,E401,E403-E408, E601,E602,E702-E704
318029-02	MOS 8520 R4 AMIGA CIA	U7,U8	252173-01	FERRITE BEAD RADIAL	E431-E433,R435
390110-01	TTL 74F04	U33	251878-02	LINE FILTER	LF1
318050-01	TTL 74F244	U34,U35	252133-01	LONG FERRITE BEAD	FB802
310003-01	TTL 74HC245	U40,U41	903025-01	FERRITE BEAD AXIAL	E431-E433,E435
901521-11	TTL 74LS157	U15	TRANSISTORS		
901521-13	TTL 74LS244	U10,U12	390254-01	JFET MPF102/PN4302	Q321,Q331
901521-31	TTL 74LS32	U37	902658-01	NPN 2N3904	Q501,Q711
901521-29	TTL 74LS373	U11,U13	902707-01	PNP 2N3906	Q301,Q502,Q503
901521-38	TTL 74LS38	U36	RESISTORS		
390229-01	VIDEO HYBRID	HY1	901600-36	1/2W CF, 1	R309
318070-01	MOS 8370 R3 FAT AGNUS (NTSC)	U2	901600-50	1/2W CF, 4.7	R401,R405,R406,R408
318071-01	MOS 8371 R1 FAT AGNUS (PAL)	U2	901600-15	1/2W CF, 47	E501-E503
390433-01	MOS 8373 R2 DENISE HR	U4	901550-64	1/4W CF, 10	R301,R302
381099-04	DRAM 256K X 4 120 nS	U16-U19	901550-90	1/4W CF, 27	R101,R102
381099-02	DRAM 256K X 4 100 nS	U16-U19	901550-56	1/4W CF, 47	R103-R107,R113
395093-02	ROM 256K X 16 KICKSTART 1.3	U20-U23	901550-94	1/4W CF, 68	E104,E105
	NOT LOADED	U6	901550-94	1/4W CF, 68	R111,R112,R114
CAPACITORS			901550-94	1/4W CF, 68	XR1
900462-29	MLC AXIAL NOP 47pF	C403	901550-49	1/4W CF, 100	R507
900462-29	MLC AXIAL NOP 47pF	E102,E103,E106-3109	901550-89	1/4W CF, 150	FB101
900462-29	MLC AXIAL NOP 47pF	XC1-XC3	901550-89	1/4W CF, 150	R409
900463-16	MLC AXIAL X7R 1000pF	C411-C413,C421-C423	901550-108	1/4W CF, 360	R321,R331
900463-23	MLC AXIAL X7R 3900pF	C323,C333	901550-57	1/4W CF, 390	R325,R335
900463-26	MLC AXIAL X7R 6800pF	C322,C332	901550-01	1/4W CF, 1K	R303-R305,R324,R334, R713
900463-36	MLC AXIAL X7R .047pF	C311-C314	901550-23	1/4W CF, 2.7K	R307,R502
900463-37	MLC AXIAL X7R .1uF	C321,C331	901550-19	1/4W CF, 4.7K	R201,R202,R402,R403, R503,R504
390082-01	MLC AXIAL Z5U .01uF	C308,C713,C800-C803	901550-20	1/4W CF, 10K	R306,R308,R322,R323, R332,R333,R339,R501, R505,R506
390082-02	MLC AXIAL Z5U .1uF	C711	901550-22	1/4W CF, 47K	R712
390082-04	MLC AXIAL Z5U .33uF	C1-C8,C10-C19,C33- C37,C39-C42,C301, C302,C305,C325,C335, C501,C502,C701,C804 C20-C23	901550-82	1/4W CF, 470K	R326,R336
	NOT LOADED	C306,C712	901550-84	1/4W CF, 1M	R711
390101-06	ELECT ALUM RADIAL, 10uF 16V	C303,C304,C324,C334	902410-11	RES PACK SIP PULLUP, 470 X 9	RP104
390101-04	ELECT ALUM RADIAL, 22uF 35V	C821,C822	902410-08	RES PACK SIP PULLUP, 4.7K X 9	RP101,RP102,RP401
390101-01	ELECT ALUM RADIAL, 47uF 35V	C811-C816	902410-07	RES PACK SIP PULLUP, 10K X 9	RP501
390101-02	ELECT ALUM RADIAL, 100uF 16V	C307	390227-03	RES PACK SIP SERIES, 22 X 5	RP103
390101-03	ELECT ALUM RADIAL 470uF 16V	C401,C402	390227-05	RES PACK SIP SERIES, 68 X 5	RP201,RP203
900100-56	ELECT ALUM RADIAL 3300uF 10V		390227-06	RES PACK SIP SERIES, 47 X 5	RP402,RP403
CONNECTORS			901600-129	RES 1/2W CF, 5.1	R401,R405,R406,R408
325516-04	4PIN FLOPPY POWER	CN12	390227-08	RES PACK SIP SERIES, 39 X 5	RP103
252167-01	5PIN SQ DIN	CN8		NOT LOADED	RP105-RP111,RP405
903335-08	8PIN SIL W/KEY	CN13	MISCELLANEOUS		
390241-03	D-SUB/23PIN/FEMALE/DB23S	CN5	904150-06	SOCKET, 40PIN DIP	U6-U8
390242-03	D-SUB/23PIN/MALE/DB23P	CN9	251313-01	SOCKET, 48PIN DIP	U3-U5
290241-05	D-SUB/25PIN/FEMALE/DE25S	CN7	904150-10	SOCKET, 64PIN DIP	U1
290242-05	D-SUB/25PIN/MALE/DB25P	CN6	390185-01	SOCKET, 84PIN PLCC	U2
390242-01	D-SUB/9PIN/MALE/DB9P	CN1,CN2	251313-02	SOCKET, 48PIN DIP	U3-U5
350903-01	HEADER 34PIN W/KEY	CN11	252344-01	OSCILLATOR, 28.37516MHz (PAL)	X1
390224-07	HEADER 56PIN MALE RA	CNX	325566-14	OSCILLATOR, 28.63636MHz (NTSC)	X1
252122-03	RCA JACK, YELLOW	CN10	312511-03	SCHEMATIC	
252122-01	RCA JACK, WHITE	CN4			
252122-04	RCA JACK, BLACK	CN3			
903326-08	8PIN SIL W/KEY	CN13			
903345-17	HEADER 34PIN W/KEY	CN11			
390248-01	RCA JACK, METAL	CN10			
900248-01	RCA JACK, METAL	CN3,CN4			

Connectors and Stuff

REF	TYPE	DESCRIPTION	PAGE
JP1	BLOB	Keyboard Reset	2
JP2	BLOB	Memory Address Select	2
JP3	BLOB	Expansion Bus Select	2
JP4	BLOB	MS/IRQ Select	2
JP5	BLOB	GeLock Clock Select	2
JP6	BLOB	7MHz Clock Select	2
JP7	BLOB	Expansion Port Select	3/5
JP8	BLOB	Light Pen Port Select	6
JP10	BLOB	RS232 Audio I/O	4
JP11	BLOB	IEEE RC17C Corp 5-pin	5

Connectors

REF	TYPE	DESCRIPTION
LN1	DB25	Keyboard
LN2	DB25	Mouse
LN3	DB25	Mouse
LN4	DB25	Mouse
LN5	DB25	Mouse
LN6	DB25	Mouse
LN7	DB25	Mouse
LN8	DB25	Mouse
LN9	DB25	Mouse
LN10	DB25	Mouse
LN11	DB25	Mouse
LN12	DB25	Mouse
LN13	DB25	Mouse
LN14	DB25	Mouse
LN15	DB25	Mouse
LN16	DB25	Mouse
LN17	DB25	Mouse
LN18	DB25	Mouse
LN19	DB25	Mouse
LN20	DB25	Mouse
LN21	DB25	Mouse
LN22	DB25	Mouse
LN23	DB25	Mouse
LN24	DB25	Mouse
LN25	DB25	Mouse
LN26	DB25	Mouse
LN27	DB25	Mouse
LN28	DB25	Mouse
LN29	DB25	Mouse
LN30	DB25	Mouse
LN31	DB25	Mouse
LN32	DB25	Mouse
LN33	DB25	Mouse
LN34	DB25	Mouse
LN35	DB25	Mouse
LN36	DB25	Mouse
LN37	DB25	Mouse
LN38	DB25	Mouse
LN39	DB25	Mouse
LN40	DB25	Mouse
LN41	DB25	Mouse
LN42	DB25	Mouse
LN43	DB25	Mouse
LN44	DB25	Mouse
LN45	DB25	Mouse
LN46	DB25	Mouse
LN47	DB25	Mouse
LN48	DB25	Mouse
LN49	DB25	Mouse
LN50	DB25	Mouse
LN51	DB25	Mouse
LN52	DB25	Mouse
LN53	DB25	Mouse
LN54	DB25	Mouse
LN55	DB25	Mouse
LN56	DB25	Mouse
LN57	DB25	Mouse
LN58	DB25	Mouse
LN59	DB25	Mouse
LN60	DB25	Mouse
LN61	DB25	Mouse
LN62	DB25	Mouse
LN63	DB25	Mouse
LN64	DB25	Mouse
LN65	DB25	Mouse
LN66	DB25	Mouse
LN67	DB25	Mouse
LN68	DB25	Mouse
LN69	DB25	Mouse
LN70	DB25	Mouse
LN71	DB25	Mouse
LN72	DB25	Mouse
LN73	DB25	Mouse
LN74	DB25	Mouse
LN75	DB25	Mouse
LN76	DB25	Mouse
LN77	DB25	Mouse
LN78	DB25	Mouse
LN79	DB25	Mouse
LN80	DB25	Mouse
LN81	DB25	Mouse
LN82	DB25	Mouse
LN83	DB25	Mouse
LN84	DB25	Mouse
LN85	DB25	Mouse
LN86	DB25	Mouse
LN87	DB25	Mouse
LN88	DB25	Mouse
LN89	DB25	Mouse
LN90	DB25	Mouse
LN91	DB25	Mouse
LN92	DB25	Mouse
LN93	DB25	Mouse
LN94	DB25	Mouse
LN95	DB25	Mouse
LN96	DB25	Mouse
LN97	DB25	Mouse
LN98	DB25	Mouse
LN99	DB25	Mouse
LN100	DB25	Mouse

Signal Glossary

SIGNAL	DESCRIPTION (AREA)	PAGES
28MHz	28.63635 MHz Master Clock	2
7MHz	7.15909 MHz Processor Clock	2,5
A[23:1]	Processor Address Bus (80000)	2,5,7
ACK	Data Acknowledge (Parallel Port)	6
AS	Address Strobe (80000)	2,7
A.DIN	Audio Input (RS232 Port)	4,6
A.OUT	Audio Output (RS232 Port)	4,6
BLER	Bus Error (80000)	2,7
BU	Bus Front (80000)	2,7
B3ACK	Bus Grant Acknowledge (80000)	2,7
B.155	Bus Grant (80000)	2,7
B.11	Bus Memory Access (80000)	2,7
BR	Bus Request (80000)	2,7
BCFY	Device Busy (Parallel Port)	6
CASL	Cache Address (80000)	2,7
CCK/CCKW	Cache Clock / Cache Write (80000)	2,5,7
CDS	7.15909 MHz Cache Clock (80000)	2,5,7
CN2	Media Change (Floppy)	6
CLFRWR	Read/Write Clock Read/Write (80000)	2,5,7
COMP	Non-synchronous Composite Video (Video)	5
CSYN	Composite Sync (Video)	2,5
CIS	Clear to Send (RS232 Port)	6
C[15:0]	Processor Data Bus (80000)	2,5,7
CIR	Step Direction (Floppy)	6,7
CKRD	Disk Read Data (Floppy)	4,7
CKWD	Disk Write Data (Floppy)	4,7
CKWE	Disk Write Enable (Floppy)	4,7
CMH	Cache Memory Request Line (80000)	2,4
CRH[8:0]	DRAM Address Bus (RAM)	2,5
CRD[15:0]	DRAM Data Bus (RAM)	2,5,7
CRP	Data Out Ready (RS232 Port)	6
CRK	Data Transfer Acknowledge (80000)	2,5,7
CR	Data Transfer Ready (RS232 Port)	6
E	Peripheral Enable Clock (80000)	2,5,7
EX-LOCK	Expansion Present / M.I. Lock	2,3
F[12:0]	Function Code (80000)	2,3
FIRE[7:1]	Fire Button 0-6 Joystick	2,5,7
HL	Processor Halt (80000)	2,7
HSYN	Horizontal Sync (Video)	2,5,6
INDEX	Index Pulse (Floppy)	6,7
INT[2,3,6]	Interrupt Request (80000)	2,4,6,7
IC[1:0]	1/2 Reset	6,7
IC[12:0]	Interrupt Priority Level (80000)	2,4,7
KBCLOCK	Keyboard Clock (Keyboard)	6
KBDHIA	Keyboard Data (Keyboard)	6
KBDHIE	Keyboard Reset (Keyboard)	6
LSZ[0:5]	Upper / Lower Data Strobes (80000)	2,7
LED	Power On LED / Alarm Filter Disable	4,6
LEFT/RIGHT	Left/Right Audio (Audio)	4

SIGNAL	DESCRIPTION
PEN	Light Pen
MTR	Mouse
MTRU	Mouse
MDV/MOH	Mouse
MLV/MLH	Mouse
JVL	Joystick
JVH	Joystick
PIXEL[5]	Pixel
E2[0X/0Y]	Pixel
E2[1X/1Y]	Pixel
PC	Pixel
EPOL/PL	Pixel
KCHEN	RAM
KLIN	Chip
RL[0:1]	RAM
RL	RAM
RESET	General
RGH[9:1]	Register
R[0:0]	Register
R1	Register
ROMIN	ROM
RIS	Register
RIS	Register
RXD	Register
RW	Register
SE	Select
SE[3:0]	Select
SLE	Side
SLEP	Side
TRK0	Track
TRK	Track
VMA	Valid
VPA	Valid
VSYN	Vertical
WE	Write
WRD	Write
XCLIN	External
XRDY	External

CONTENTS

DESCRIPTION	PAGE
Mouse/Joystick 1	2
Mouse/Joystick 2	2
Right Audio Output	4
Left Audio Output	4
External Floppy	7
RS232 Serial Port	6
Parallel Printer Port	6
Power Supply Connector	8
Video Output	5
Composite Video	5
Internal Floppy Signal	7
Internal Floppy Power	8
Keyboard Connector	6
Expansion Connector	7
Mem. Exp. Main Board	3

ECO Log

ECO NUMBER	DESCRIPTION	DATE
880283	Ad: E Clock Termination	03/03/89

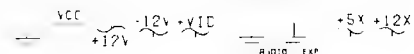
DESCRIPTION (AREA) PAGES

Pen/Joystick (Joysticks)	2,6
Q (Floppy)	4,6
Dr. Drive U (Floppy)	4,6,7
Coordinate X/Y (Joysticks)	5
Coordinate X/Y (Joysticks)	5
RAM over RAM	2,6
System Loading	2,7
Pixel Switch (Video)	5
Lines X/Y (Joysticks)	4,5
Lines X/Y (Joysticks)	4,5
Parallel Port	6
Low End Data (Parallel Port)	5
Register Enable (Chips)	4
Address Strobe (DRAM)	4,5
Ready Floppy	6,7
Reset	6,7
Register Address Bus (Chips)	2,4,5
Green Flag (Video)	5
Indicator (RS232 Port)	5
Enable (ROM)	2,3
Reset to Send (RS232 Port)	6
Processor Reset (80386)	4,6,7
Write Data (RS232 Port)	4,6
Processor Read/Write (80386)	4,6,7
Parallel Port	6
Serial (Floppy)	4,6,7
Serial (Floppy)	6,7
Internal Command (Floppy)	6,7
Zero Sense (Floppy)	6,7
Internal RS232 Port	4,6
Memory Address (80386)	2,6,7
Peripheral Address (80386)	2,7
Color Sync (Video)	2,5,6
Enable (DRAM)	2,3
Protect Sense (Floppy)	6,7
Color Lock (Video)	2,5
Color Clock Enable (Video)	2,5
Color Data Ready	2,5

Key Components

REF	CHIP	DESCRIPTION	PAGE
U1	68000	68000 Processor	2
U2	8370	Fast Agnus NISC	2
	8371	Fast Agnus PA	olt
	8372	Enise HR	olt
U3	8364	Enise	4
U4	8362	Enise	5
	8373	Enise HR	olt
U5	5113	Enise	2,4
U6	asst	RAM 128Kx16, 200 ns	3
U7,8	8526	Enise VIA, 1 Mhz	6
U14	LF347	E MOS Op-Amp	4
	LC84	E MOS Op-Amp	olt
U38	1488	E MOS Line Driver	4
U39	1489	E MOS Line Receiver	4
U42	NE555	Timer	7
U16-19	asst	DRAM 1Mx1, 150 ns	3
U20-23	asst	DRAM 1Mx1, 150 ns	3
X1	05L	23.63636 MHz NISC	7
	05C	23.37512 MHz PA	olt
HY1	asst	Video Hybrid	5

ATTEMPT TO FORCE NODE NUMBERS WITH SEQUENCE

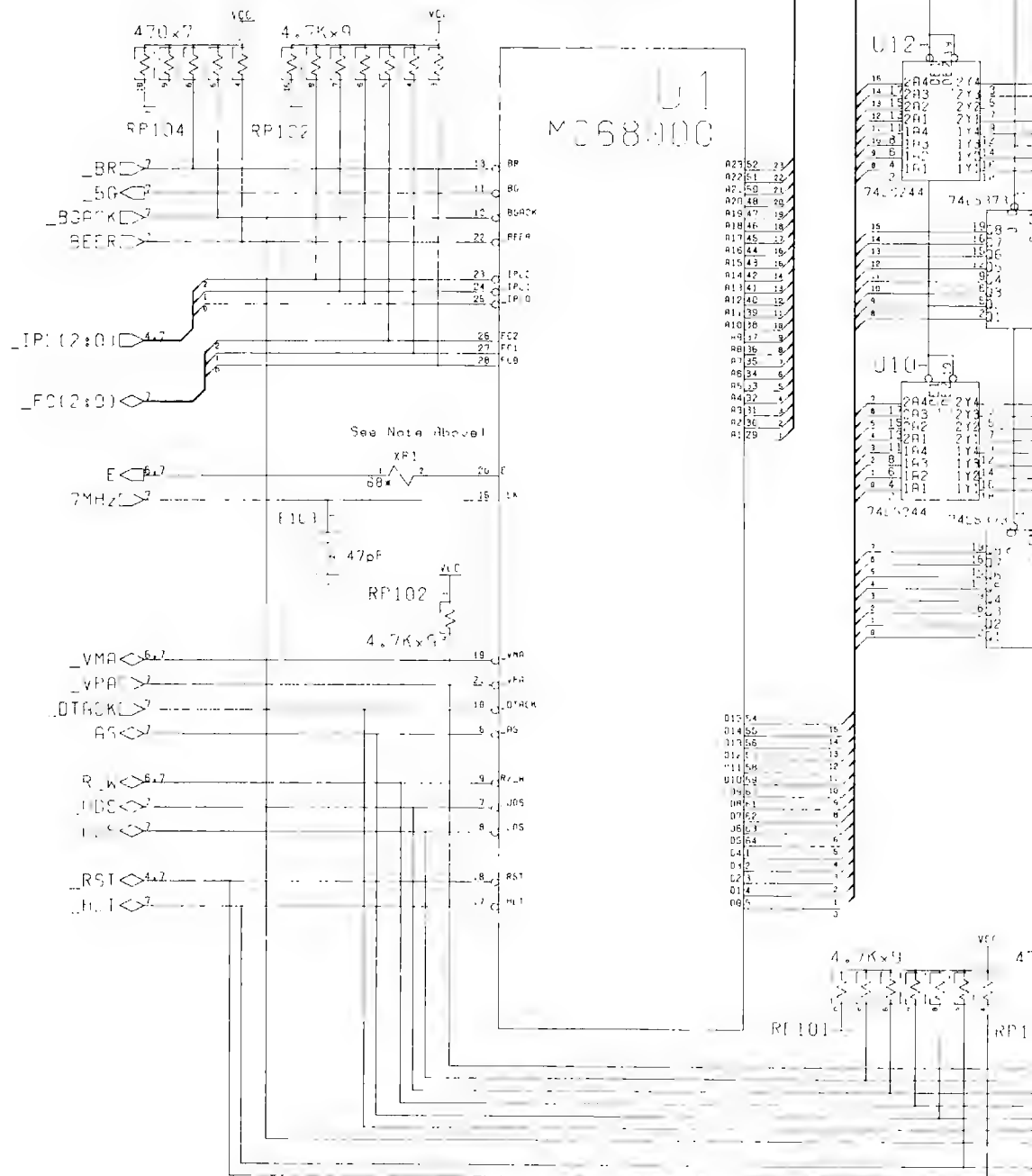


Sheet 2 of 8

Note: Various components are for LMI Control and may be loaded with funny strings...

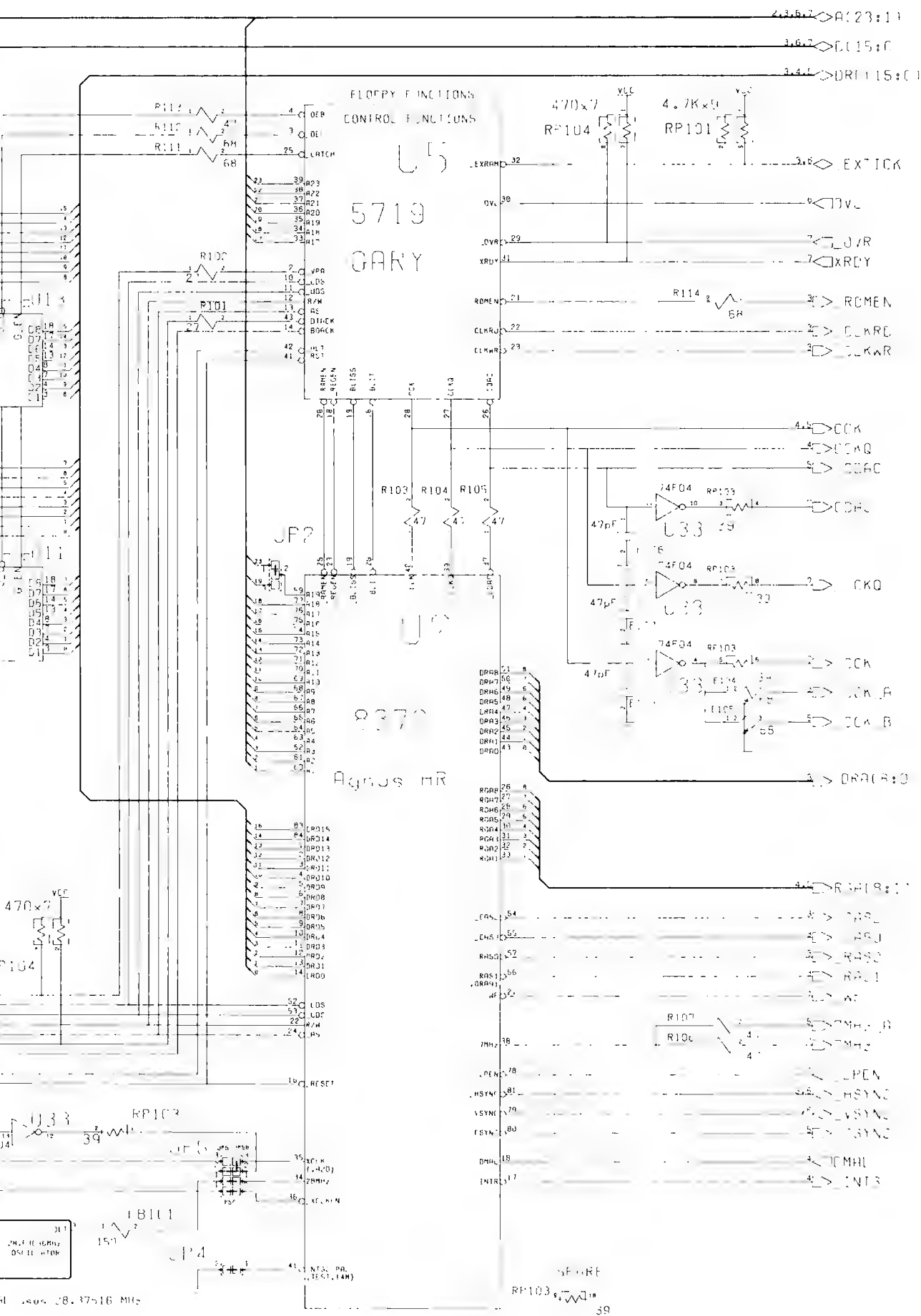
PC controls where expansion now maps to:
A25 = 0.0000 (default), A15 = 090000

XRI is added to some Loans per ECU 880293

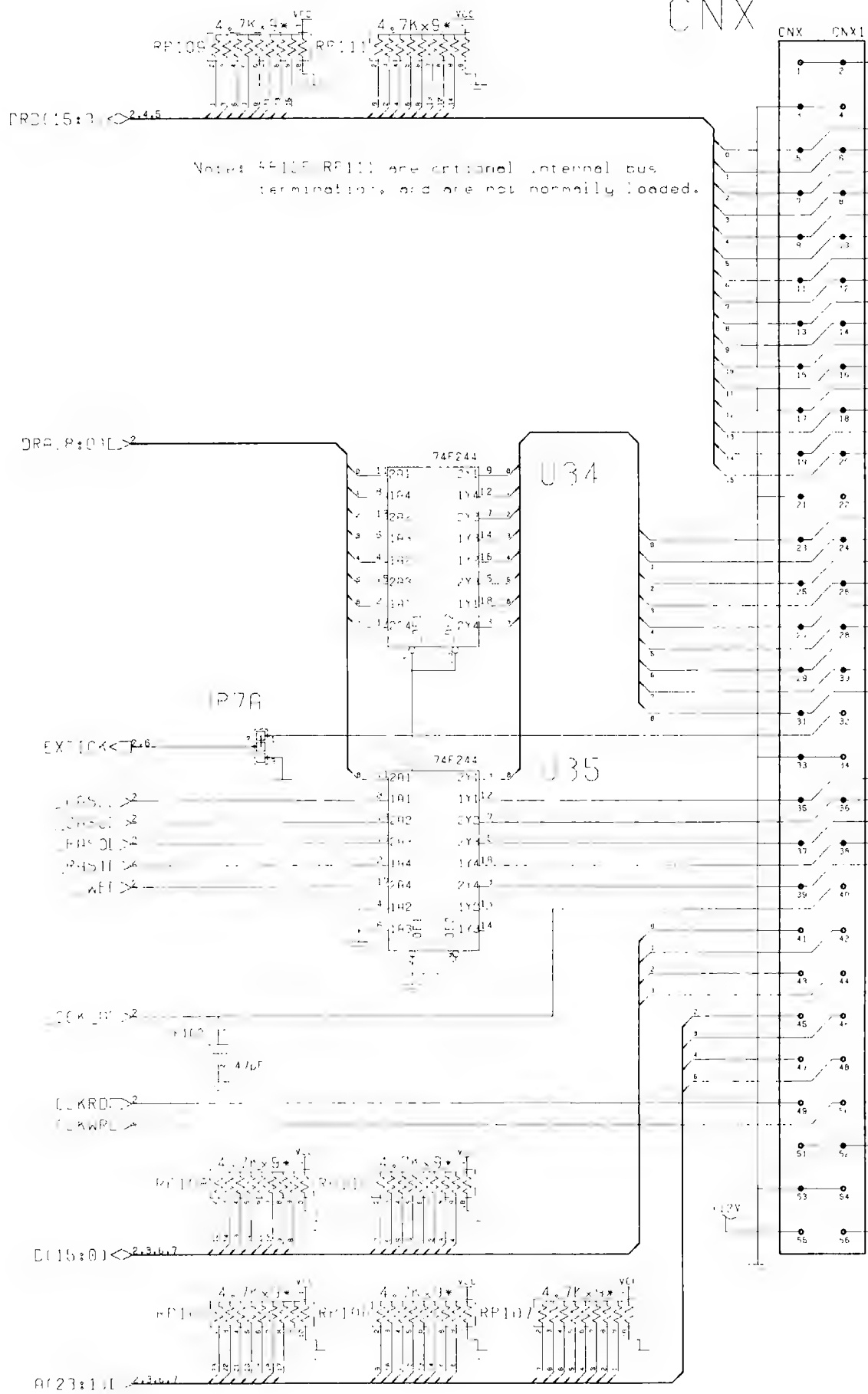


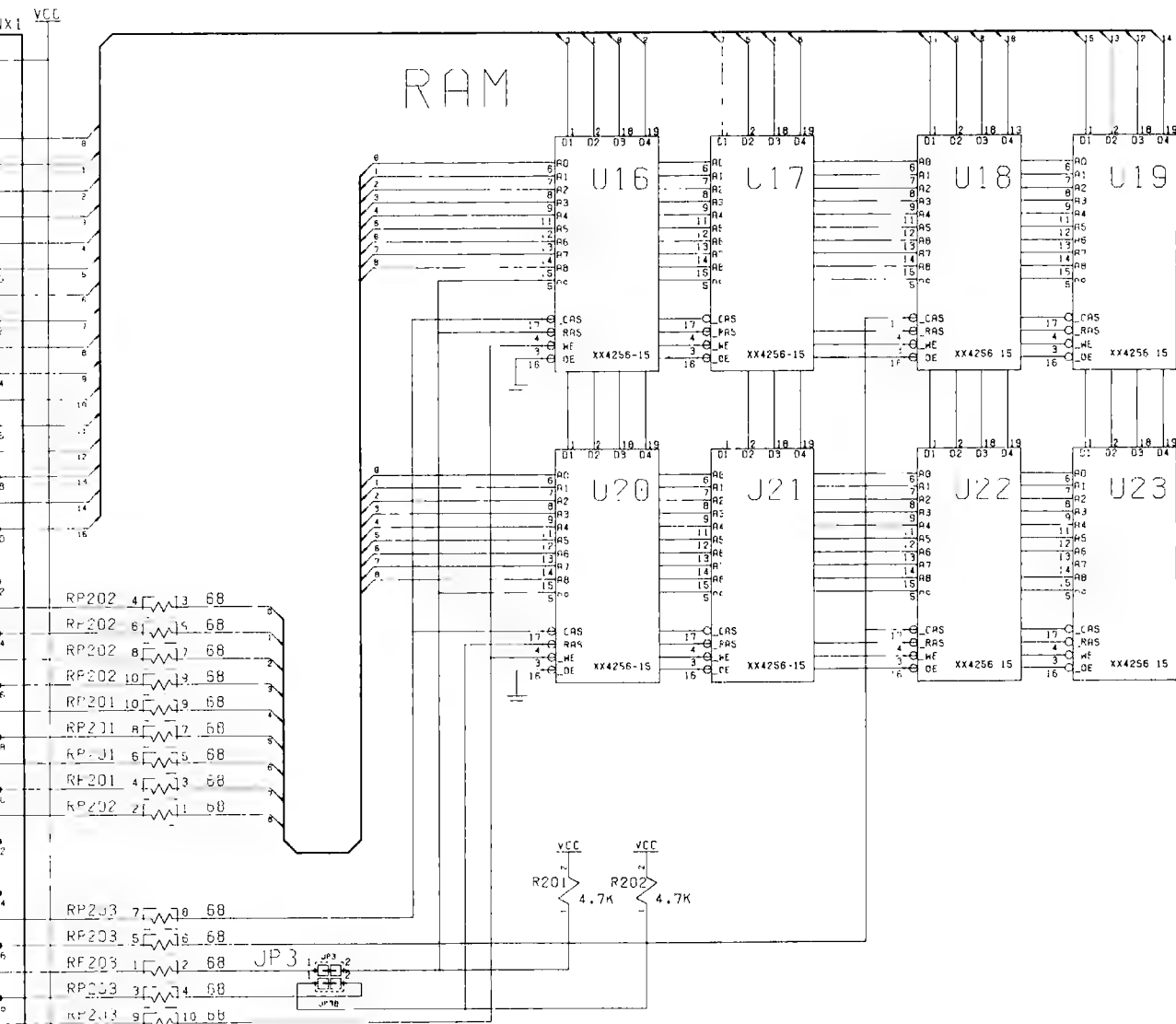
XC, KF NF, >2
R(20)F >2, 1.6? —
XC, KF NF, >2
X; —

Notes: Priced



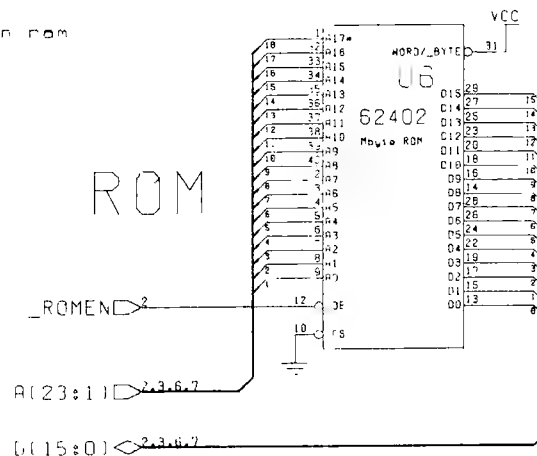
Sheet 3 of 8





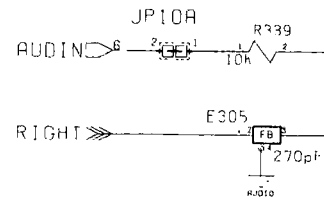
Note: JP3 swaps internal vs. expansion ram

ROM



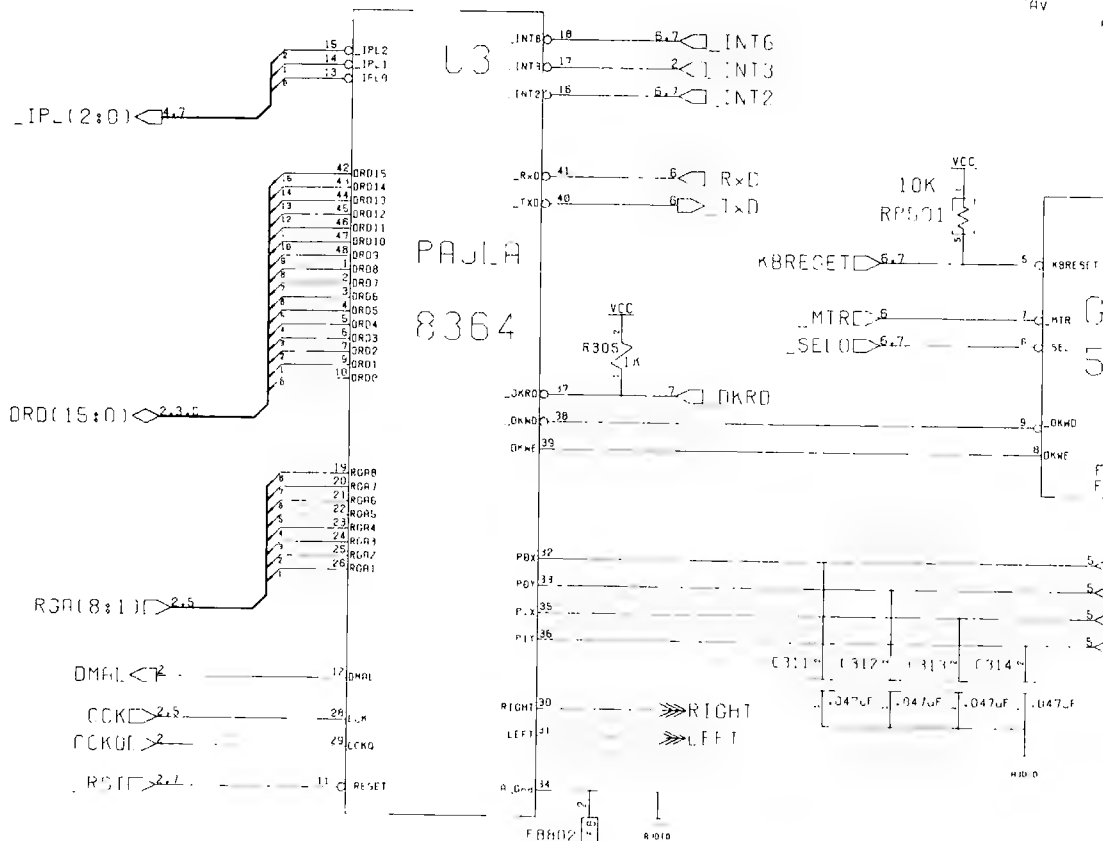
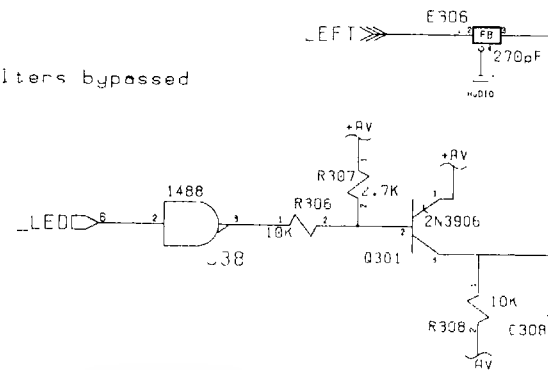
SPARE

RP201 1 12 68

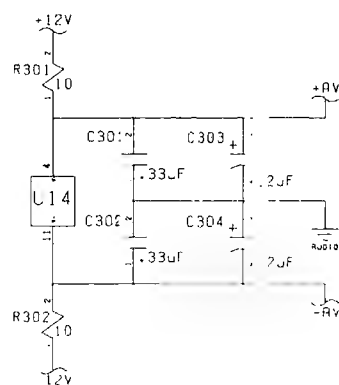
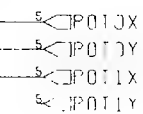
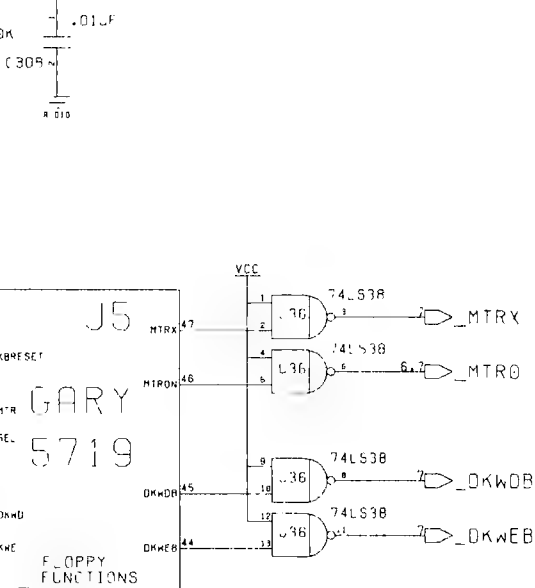
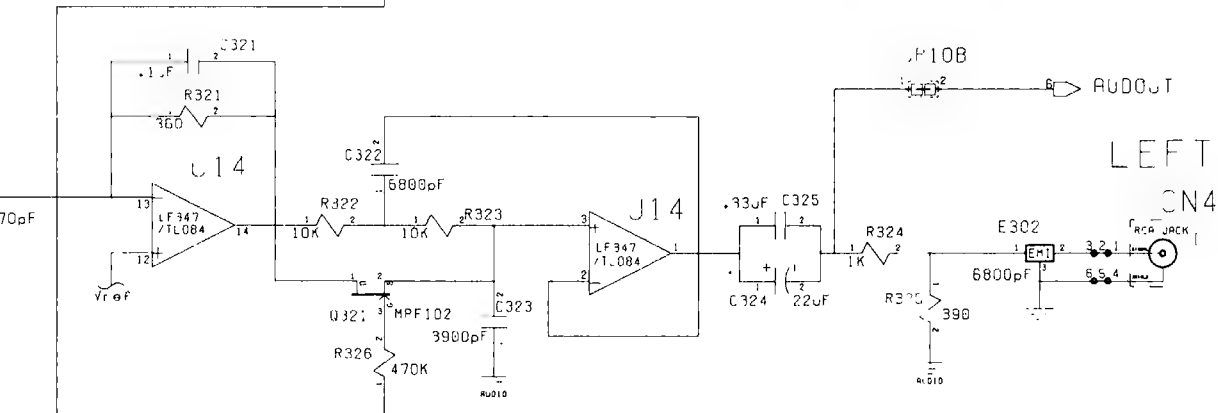
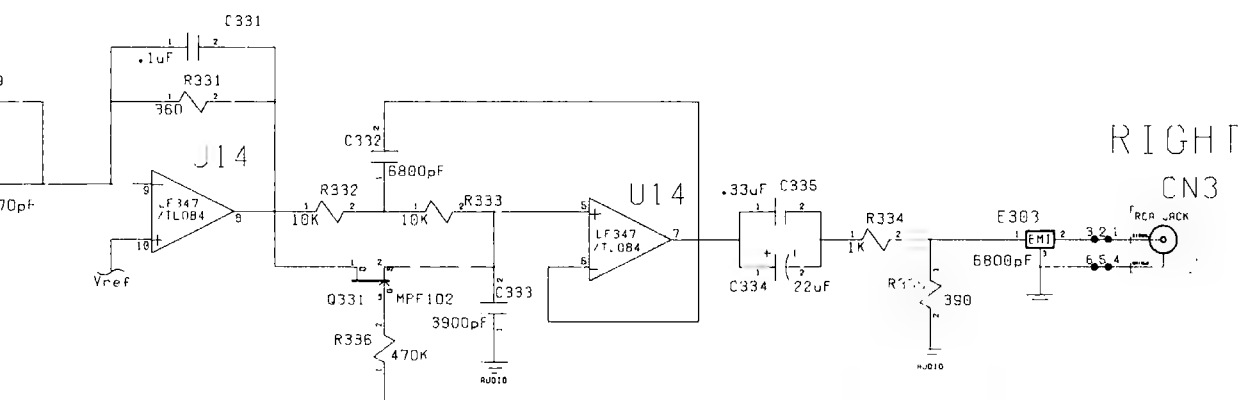


AUDIO FILTERS

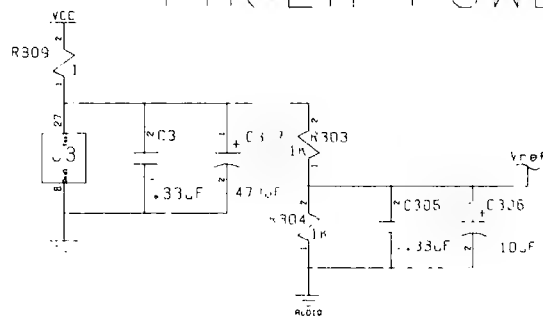
Note: LED off, Filters bypassed

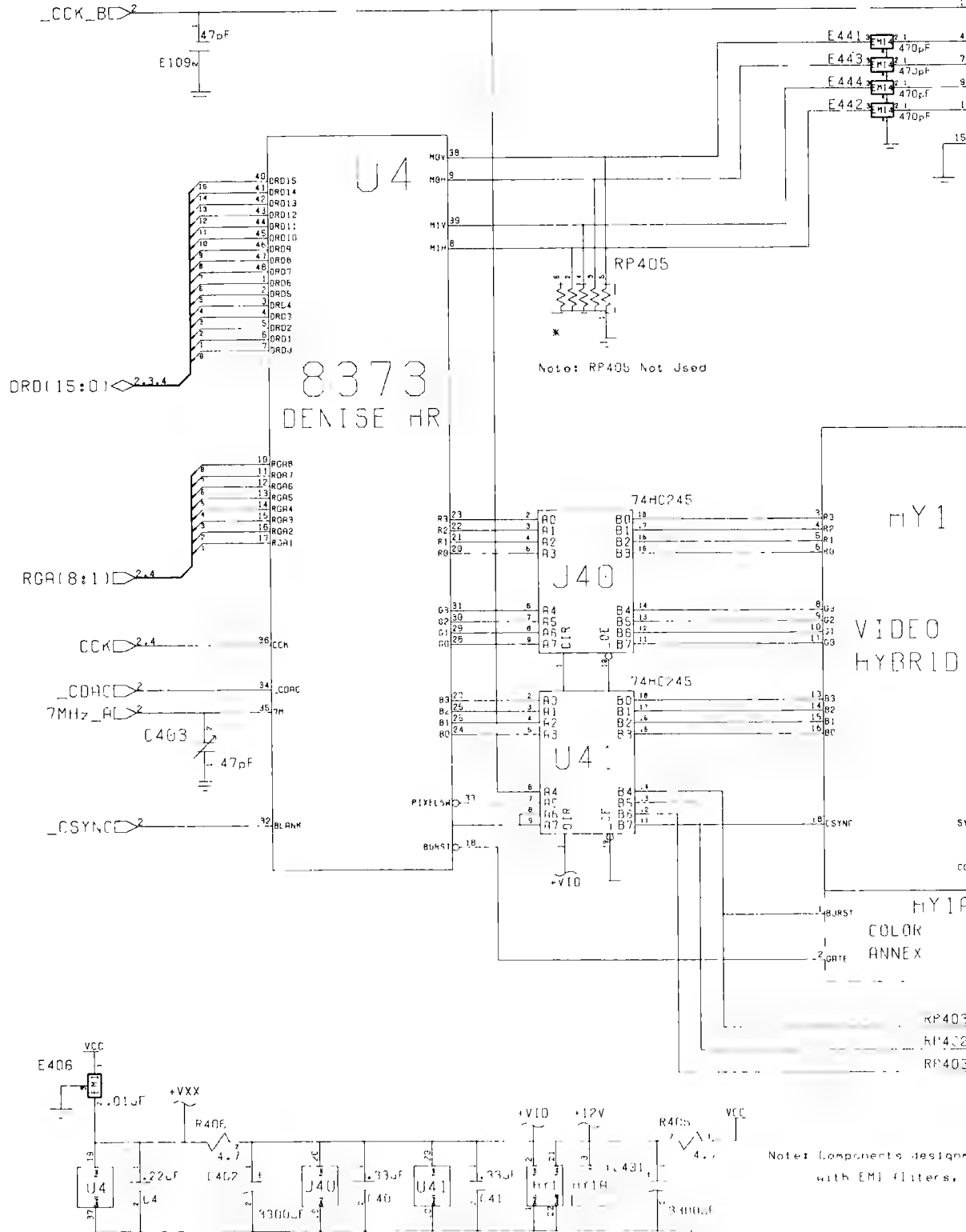


Note: Ground Interconnection near audio jacks.

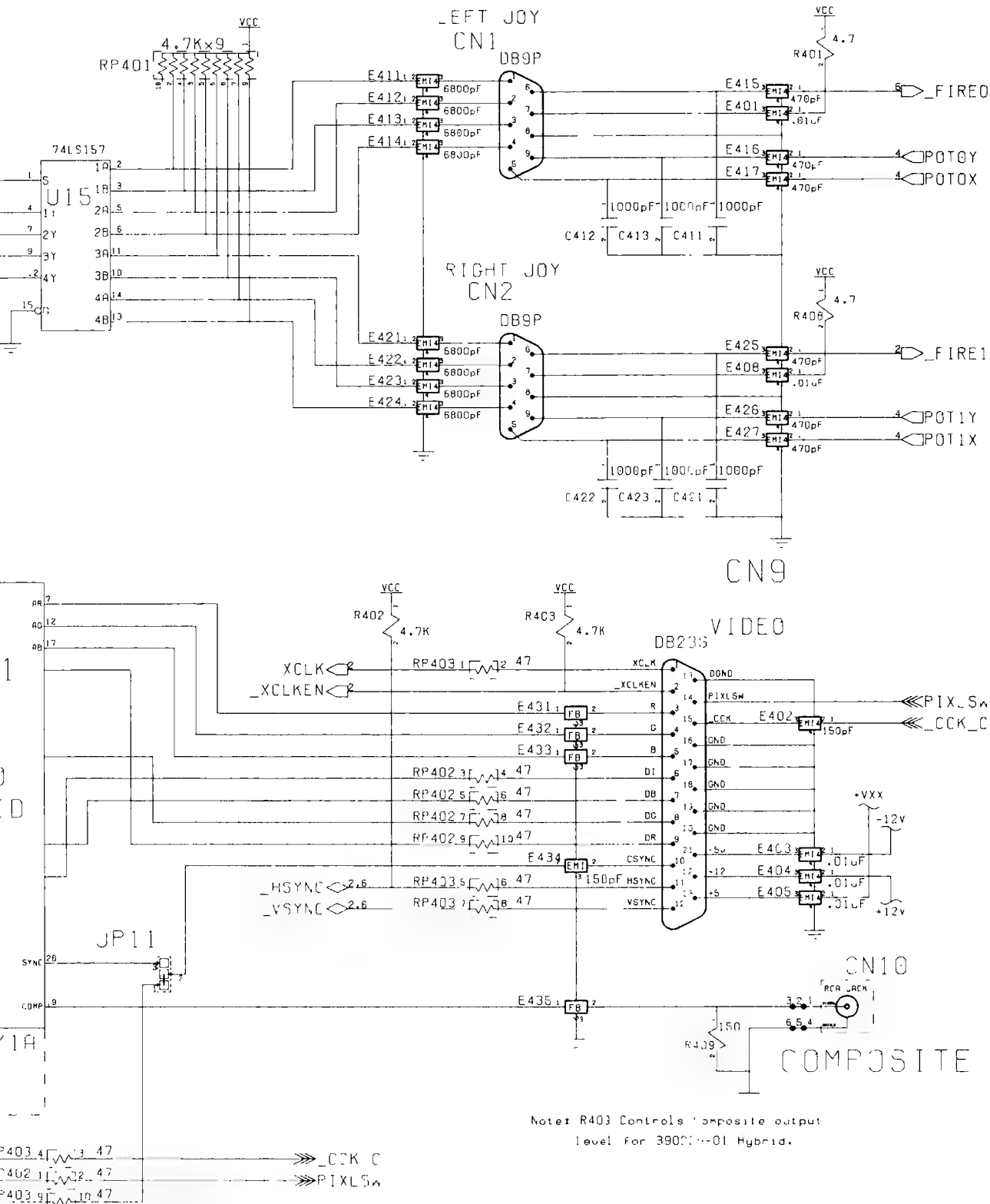


PAULA POWER!

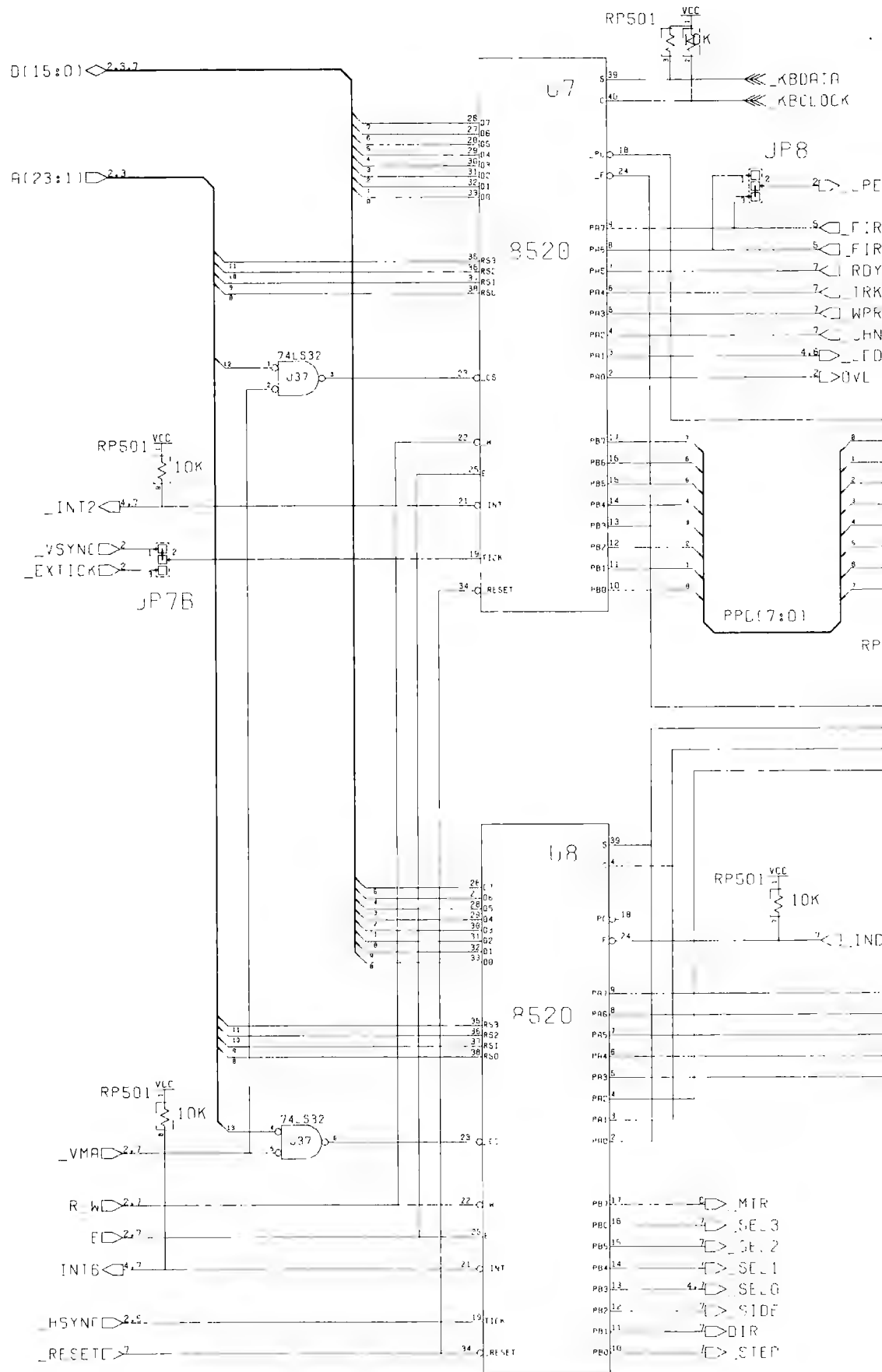




Note: Pin 2 and 21 of HY1 connected internally

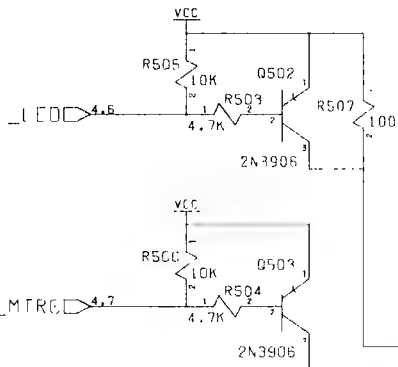


Schematic #312511-03, Rev. 6A/7
Sheet 6 of 8

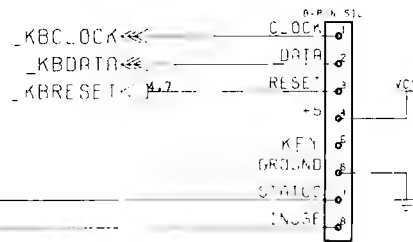


Notes: r501-503 are loaded with

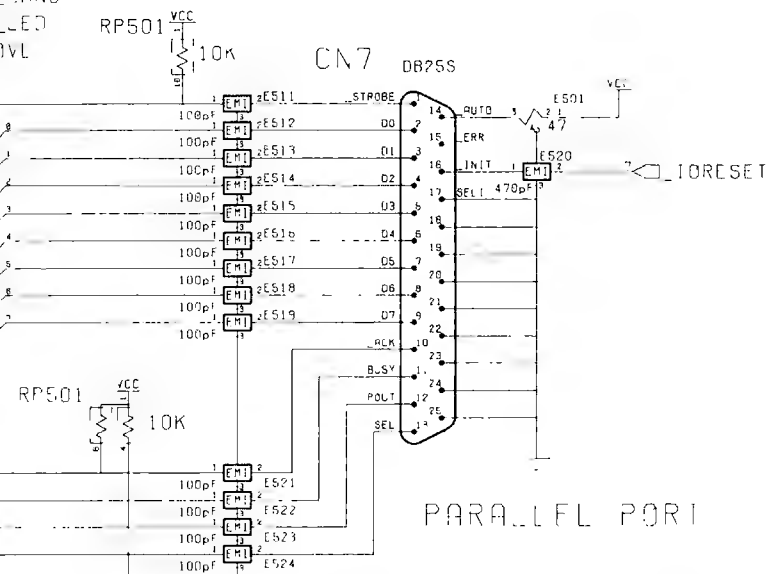
LPFN
FIRE1
FIRE0
RDY
TRK0
WPROT
LHNG
LED
OVL



KEYBOARD CONNECTOR

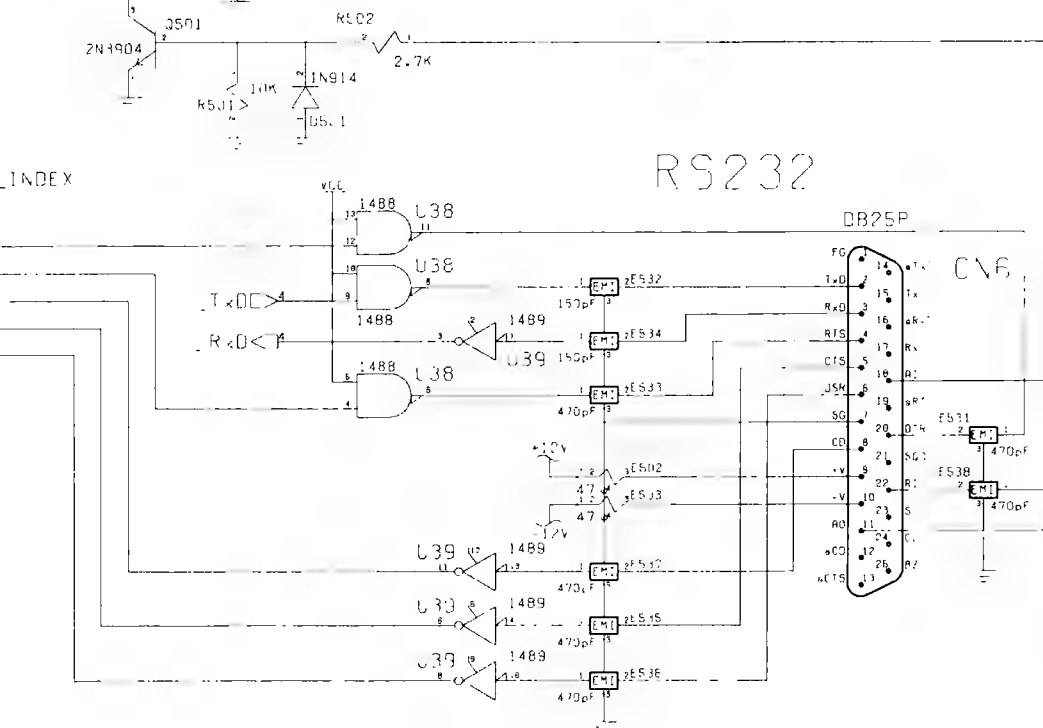
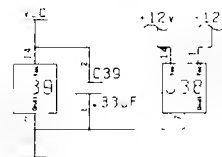


CN13



PARALLEL PORT

RS232 DECOUPLING

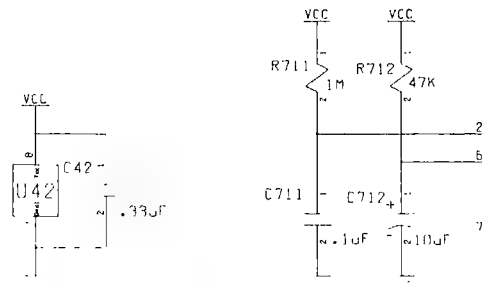
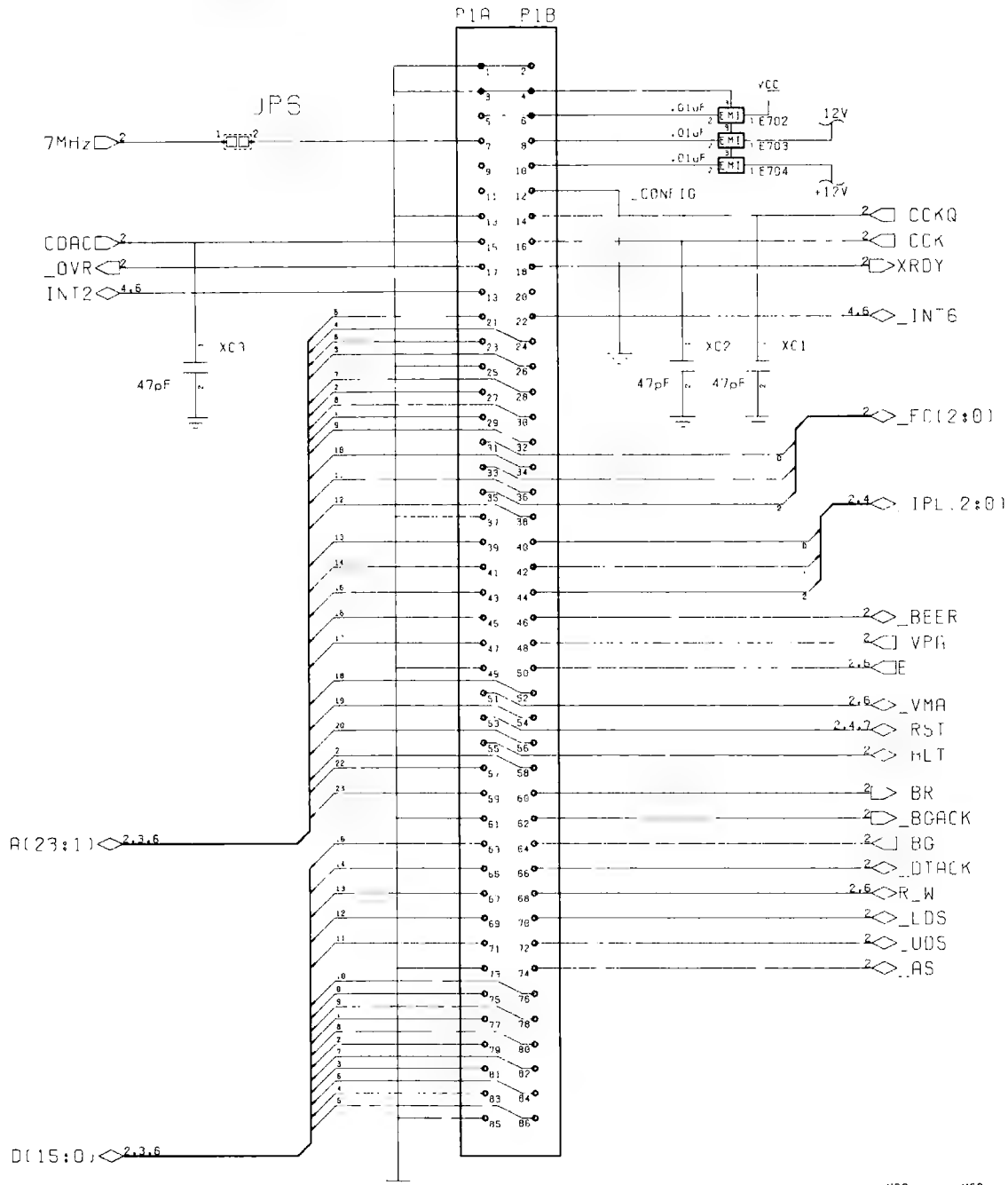


RS232

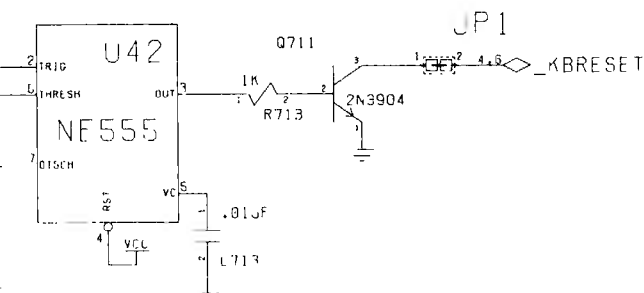
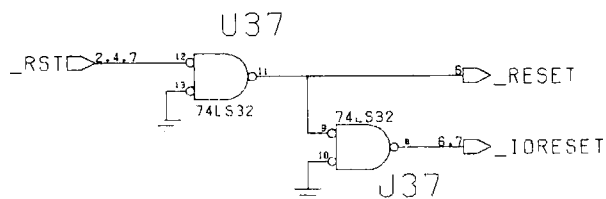
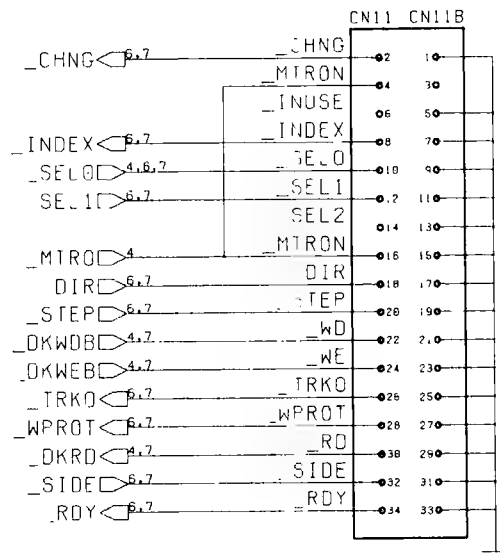
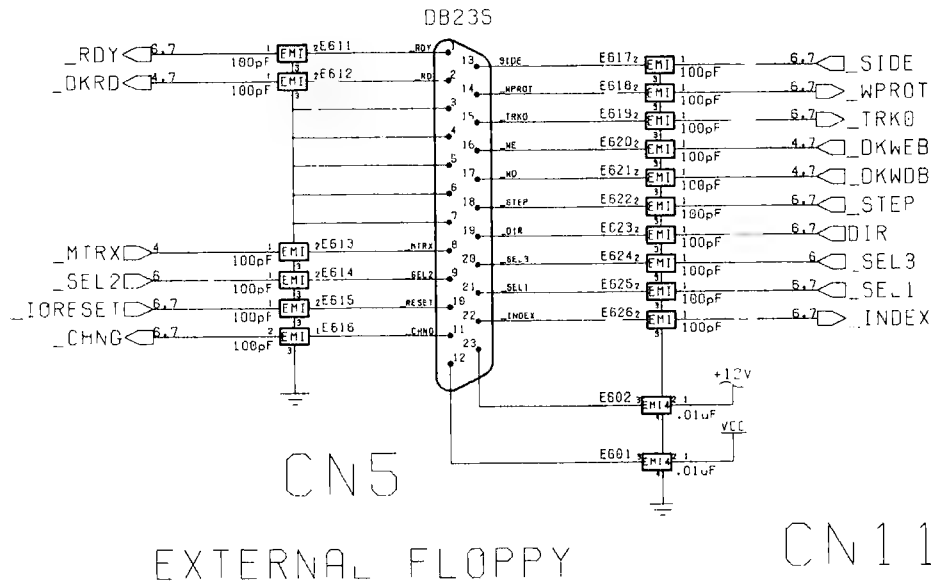
INDEX

with 47 Ohm 1/2 W resistors

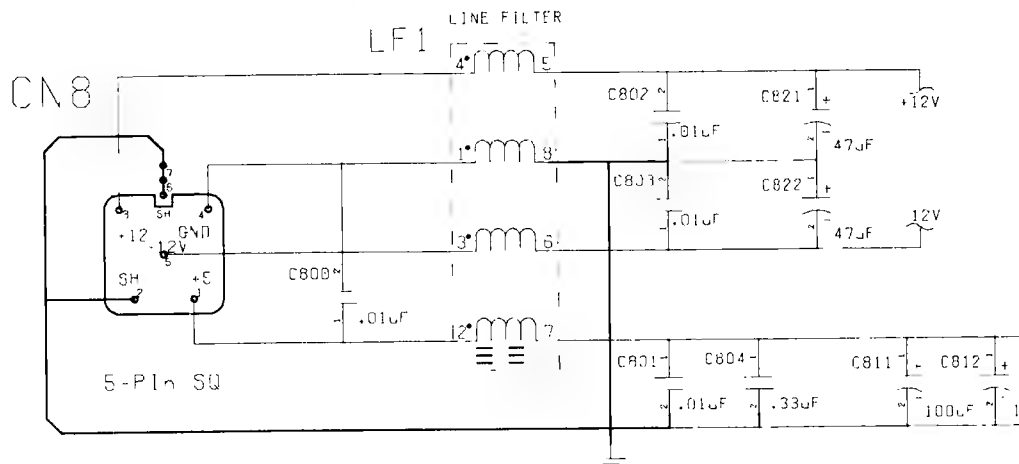
EXPANSION P1



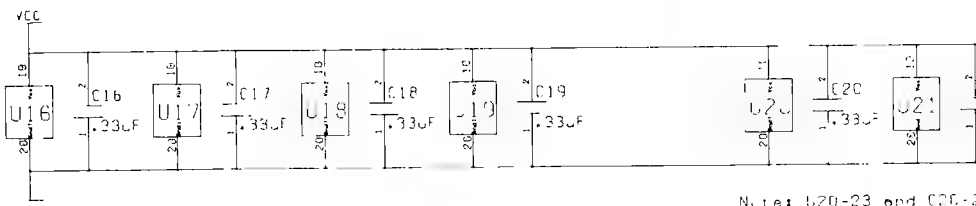
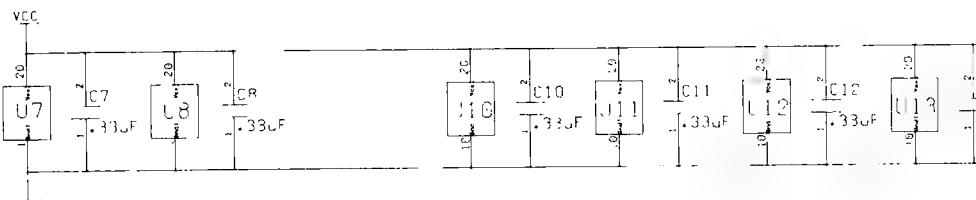
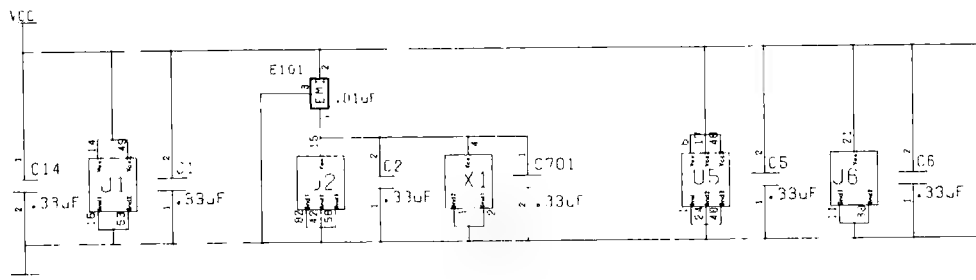
POWER UP RESET



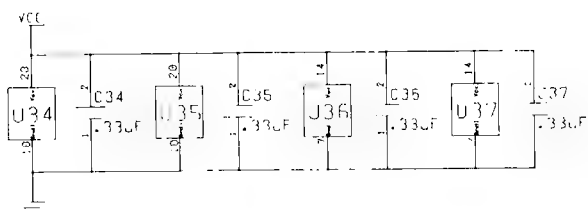
POWER INPJT



NOTE: HEAVY LINES INDICATE A SINGLE POINT CONNECTION

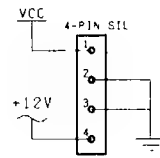


Note: L20-23 and C20-23



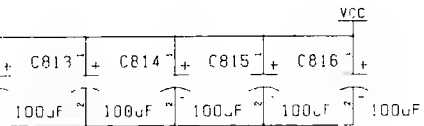
DECOURP

FLOPPY FLOWER

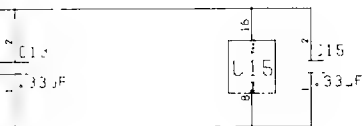
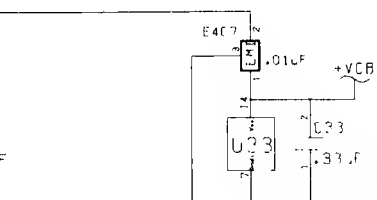
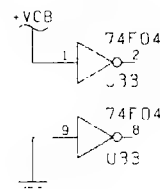


CN12

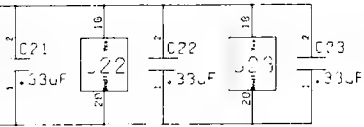
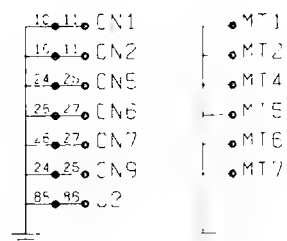
Note: Some drives are +5 only...



SPARES



GROUNDED HC.FS, &c.



23 not loaded for 512K system

PLING

COMPONENT PARTS LIST **PCB ASSEMBLY RAM EXPANSION/CLOCK** **PCB ASSEMBLY #312604-04, A501, REV. 6C**

Commodore part numbers are provided for reference only and do not indicate the availability of parts from Commodore. Industry standard parts (Resistors, Capacitors, Connectors) should be secured locally. Approved cross-references for TTL chips, Transistors, etc. are available in manual form through the Service Department, order #314000-01.

IC COMPONENTS			CONNECTORS		
318099-04	DRAM 256K X 4 120nS	U1-U4	380311-05	HEADER 56PIN FEMALE RA	CNY
318099-02	DRAM 256K X 4 100nS	U1-U4	DIODES		
318073-01	OKI MSM6242B REAL TIME CLOCK	U9	900850-01	SWITCHING 1N4148	D912
390392-01	TTL 74F27 TRIPLE 3-IN NOR	U13	390017-01	SWITCHING 1N914	D911
390198-01	TTL 74F86 QUAD 2-IN XOR	U12	MISCELLANEOUS		
901521-33	TTL 74LS163 BINARY COUNTER	U11	380393-01	BATTERY NICD VARTA 3/60DK, 3.6V 60MAH	BT9
RESISTORS			900560-01	CRYSTAL WATCH STYLE, 32768Hz	Y9
901550-58	1/4W CF, 470	R911,R913	312606-03	FABRICATION DRAWING	
901550-20	1/4W CF, 10K	R912,R914,R915	312578-03	PCB ARTWORK	
390227-05	RES PACK SIP SERIES, 68 X 5 NOT LOADED	RP901-RP903,RP911 RP912	312605-03	SCHEMATIC	
CAPACITORS					
900462-21	MLC AXIAL NPO 22pF	C911			
390082-01	MLC AXIAL Z5U .1uF	C9			
390082-04	MLC AXIAL Z5U .33uF	C1-C4,C11-C13			
251029-06	TRIMMER (YELLOW) 6.8-45pF NOT LOADED	TC9			
390101-02	ELECT ALUM RADIAL 100uF 16V	C10			
900410-13	ELECT TANTALUM RADIAL 4.7uF 16V	C902,C903			
390101-05	ELECT ALUM RADIAL 4.7uF 16V	C913			

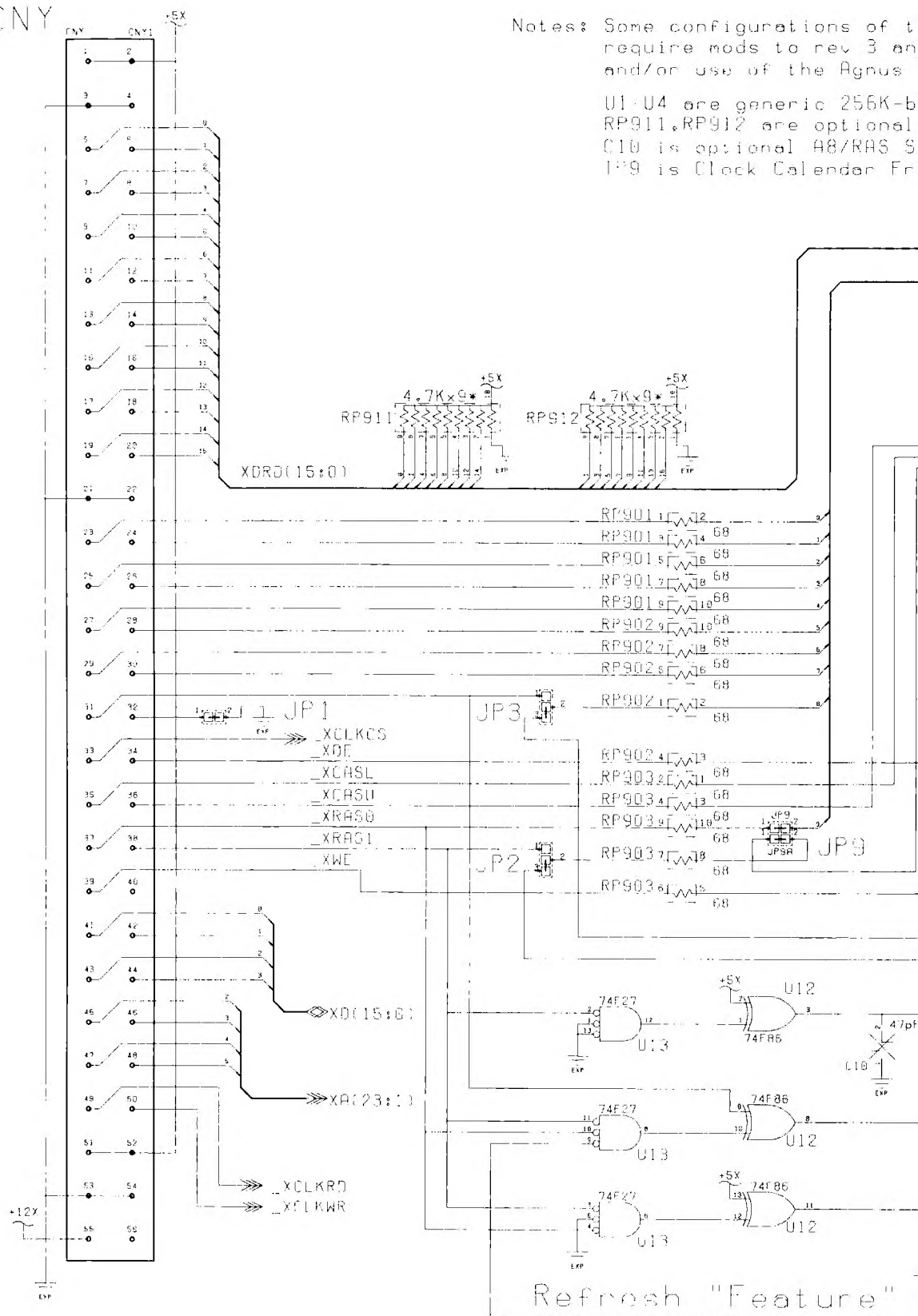
Schematic #312605-01, Rev. 6C

Sheet 1 of 1

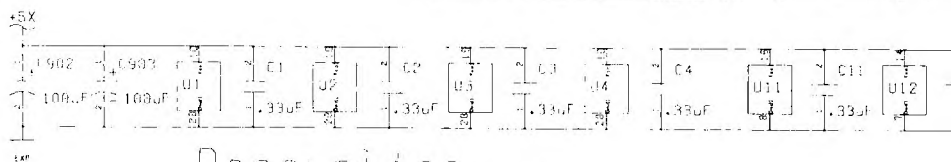
CNY

Notes: Some configurations of t
require mods to rev 3 an
and/or use of the Agnus

U1-U4 are generic 255K-b
RP911,RP912 are optional
C10 is optional AB/RAS S
IP9 is Clock Calendar F

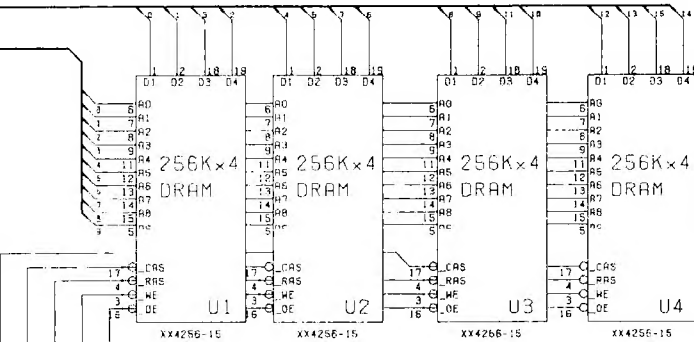


Refresh "Feature"



Decoupling...

of this RAM expansion
and 5 A500 boards
plus HR 2MB bond-out.
16K-bit x 4 120 nS DRAM
On-board DRD Termination
5 Setup Time Control
Frequency Test Point



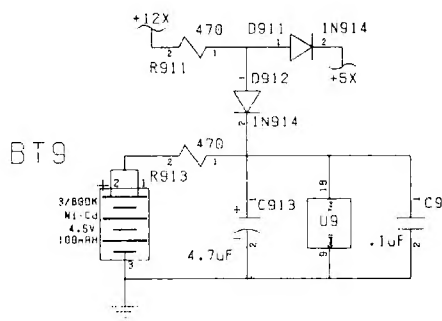
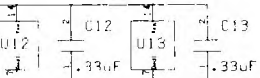
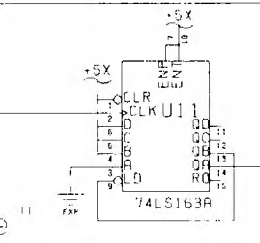
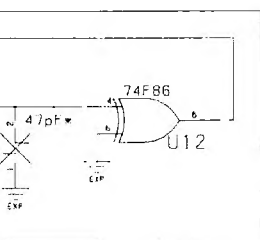
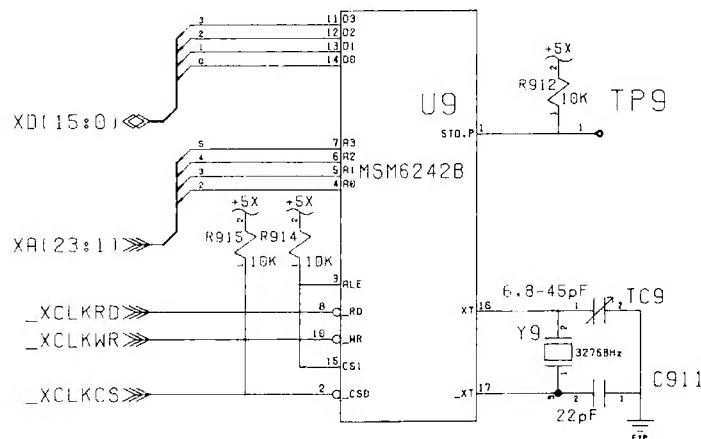
ECO History

ECO NUMBER	DESCRIPTION	DATE

Configuration Options

	A	B
on-board	512K	2M
on A501	512K	-
U1-U4	256Kx4	1Mx4
Agnus	Fet/HR	HR (2M)
JP1	1-2	-
JP9	1-2, 1-2	1-1, 2-2

Real Time Clock



Real Time Power



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